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ABSTRACT

A longitudinal study was conducted to determine the short-term (2-year), intermediate (5-year), and long-term (10-year) impact of earning a high school equivalency diploma by taking the General Educational Development (GED) Tests in Iowa. The random sample of 2,500 GED graduates was drawn from each time cohort (individuals who had passed the GED Tests in 1980, 1985, and 1988) for a total sample of 7,500. A 6-page, 40-item follow-up survey was mailed in spring 1991; 1,597 returns were received, with similar response rates for the 3 follow-up time cohorts. Findings indicated that between just prior to passing the GED Tests and 1990, respondents reported substantial and statistically significant gains in employment, hours worked per week, job skill level, job satisfaction, personal income, reduction in welfare, job quality, property acquisition, and personal savings. The gains in hours worked per week were greatest between 2 and 5 years after passing the GED and then they leveled off between 5 and 10 years. The reported gains in job skills, job satisfaction, personal income, savings and indices of job quality, and economic benefits increased steadily over time. The overwhelming majority of GED graduates who enrolled in the adult basic education (ABE) program reported that attending ABE classes had helped them acquire the requisite knowledge to pass the GED Tests. (Appendixes, amounting to approximately one-half the report, include 24 references, information on the instruments employed in the study, qualitative comments, and descriptive statistics.) (YLB)

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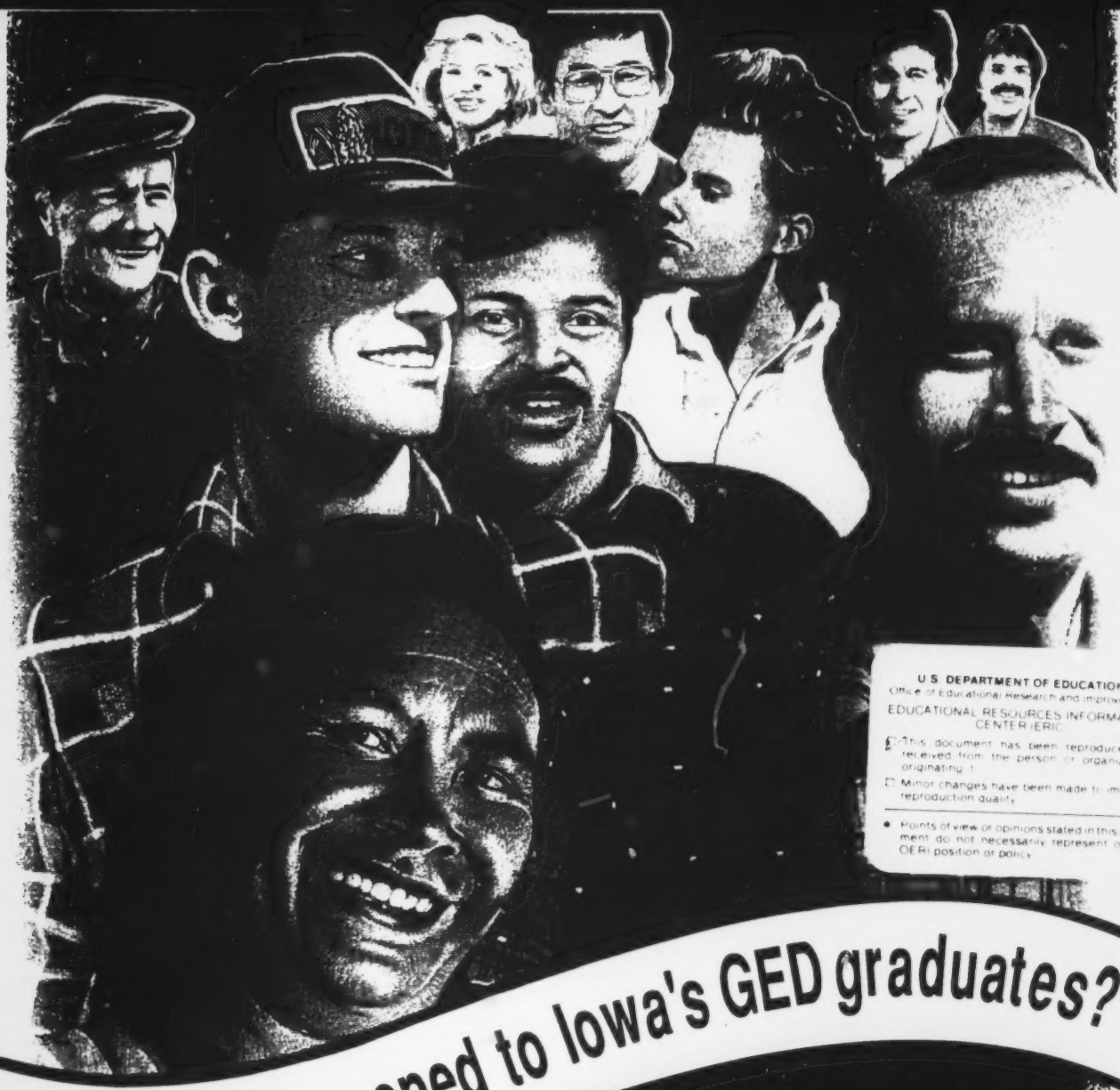

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What has happened to Iowa's GED graduates?

Final Report
April 1992

A Two-, Five-, and Ten-Year Follow-up Study

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A Two-, Five-, and Ten-Year Follow-Up Study

Final Report

April 1992

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Grimes State Office Building
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Epigraph

"Getting my GED and attending college not only helped me get a job I enjoy, but it made me realize that I can be independent if I need to be. I have potential I never realized I had."

Two Year GED Graduate

"Getting my GED is one of the best things I've done it helped my self-esteem tremendously and I've since done very many positive things with my life! My GED instructor was terrific."

Two Year GED Graduate

"I attended GED classes after being retired for 13 years. After my husband's death, I decided to do something constructive with my life. My volunteer work as a GED aide, led to a job as a paid aide. I now work full time in a small family business, managing an office."

Five Year GED Graduate

"My GED graduation increased my self-respect and gave me the courage to quit a good paying factory job to pursue an education in elementary education. Best thing I've ever done for myself."

Five Year GED Graduate

"I took the test after my son was born. I didn't see how I could tell him to go to school when I hadn't finished myself. I would love to go to college, but I have a good job now as a supervisor and will save for my son's college fund."

Five Year GED Graduate

"Twenty seven years after leaving high school I finally had my diploma."

Ten Year GED Graduate

"I always regretted not having received my diploma. I went to inquire, was treated so nice that day, and passed. I felt so good and was finally at peace with myself. Thank you!"

Ten Year GED Graduate

"I am the only member of my immediate family to have graduated and I was very proud even though I was 51 years old."

Ten Year GED Graduate

"I am glad I got my GED. I graduated the same year as my first born child."

Ten Year GED Graduate

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Executive Summary: What Has Happened To Iowa's GED Graduates? A Two-, Five-, and Ten-Year Follow-Up Study

Overview

Introduction

The purpose of this study was to determine the short-term (two-year), intermediate (five-year), and long-term (ten-year) impact of earning a high school equivalency diploma (GED) in Iowa. The study was sponsored by the Iowa Department of Education. Dr. Hal Beder, of Rutgers University, was the principal investigator.

Background

In the past several years, adult literacy has become an issue of serious public concern. Low literacy reduces the quality of our nation's workforce and hinders our ability to compete in the world economy. It constrains social and economic mobility and abets poverty. Estimates of adult functional illiteracy range as high as twenty percent of the national adult population, and nationally it is known that over fifty million adults lack high school diplomas.

In Iowa, as in most states, literacy education is provided to adults through the federally funded adult basic education (ABE) program. This program is offered through Iowa's community college delivery system. High school certification, the goal of the overwhelming majority of ABE students, is provided through the American Council on Education's GED program. To earn a GED diploma, adults must pass five different tests: Writing Skills, Social Studies, Science, Interpreting Literature and the Arts, and Mathematics. The tests are normed on graduating high school seniors. In order to pass the GED Tests in Iowa, candidates must outperform twenty-five percent of the Iowa high school senior norming population.

The GED testing program, thus, provides access to high school certification for adults who lack high school diplomas. The ABE/GED instructional program provides instruction for those who want help to pass the tests. By virtue of their goals, the ABE and GED programs are vital components of Iowa's postsecondary educational system. But are these programs effective? It was the purpose of this study to provide some answers.

Goals

The specific goal of this study was to assess the impact of earning a GED diploma in Iowa. It was guided by the following questions:

- **To what extent does earning a GED diploma provide employment and economic benefits to both individuals and society?**

  The perception that adult basic education and GED completion benefit both individuals and society in terms of: better employment, increased income, increased economic productivity, and a reduction of public assistance is a central rationale for the public subsidy of these programs. For this reason, many state and national impact studies have measured impact on these dimensions. Yet, to our knowledge, no previous study has investigated the long term benefits of earning a GED diploma. To do so is important, since it is quite possible that long term benefits differ from short-term benefits in both magnitude and kind. To address this issue, we have investigated benefits obtained two, five, and ten years after passing the GED Tests.

- **To what extent does earning a GED diploma provide quality of life benefits other than those directly related to employment and economic performance?**

  Participation in the ABE and GED programs is voluntary. Learners participate to achieve personal goals which, as the research suggests, are sometimes intrinsic and are often unrelated to economic performance. Thus, it is important to consider attainment of non-economic benefits since many of these benefits motivate enrollment in ABE and GED programs. Moreover, quality of life is not based on economic gain alone. As a result, non-economic variables identified for this study included: enhanced parenting skills, contributions to the community, enhanced self-esteem, and general life improvement.

- **To what extent does the ABE/GED program assist learners to acquire the requisite knowledge necessary to pass the GED Tests and to meet their own goals? To what extent are learners satisfied with the ABE/GED program?**

  The overriding goal of Iowa's ABE program is to help learners acquire the necessary skills and knowledge needed to become more productive, self-sufficient citizens. In order to achieve this goal, the program provides basic literacy and mathematics instruction to learners whose literacy levels range from low level literacy to near high school completion proficiency. High school certification is the goal of the great majority of Iowa's ABE students. Therefore, our assessment of the ABE program focused on its success in preparing learners to pass the GED Tests. The assessment was limited only by the fact that those who had passed the GED Tests were included in the sample.

Methods and Procedures

Sample

Since a major objective of the study was to measure the long-term impact of earning a GED diploma as well as short-term and intermediate effects, a sample was drawn that included time interval cohorts of GED graduates who had passed the tests over a relatively wide range of years. Therefore, time interval cohorts of two, five, and ten years were selected. The sample was developed as follows:

1. In Iowa, the same identification number is used for the GED Tests application and for driver's license records which also include current addresses. Current addresses were obtained for all individuals who had passed the GED Tests in 1980, 1985, and 1988 by matching the identification number for both sets of records.

2. A random sample of 2,500 GED graduates, for whom current addresses had been obtained, was drawn from each time cohort (1980, 1985, 1988) for a total sample N of 7,500.

Instrumentation

A six-page forty-item follow-up survey was developed to obtain information on the variables included in the study. The survey was divided into six sections. The first section asked respondents to compare their lives in 1990 to their lives just before they passed the GED Tests in respect to a series of employment and economic variables such as: employment, income, job skill level, job satisfaction, sources of income, personal savings, and further education. The remaining sections dealt with: educational history, perceived results of earning a GED diploma, satisfaction with the adult basic education program, personal background, and methods of preparing to take the GED Tests.

Items included in the follow-up survey were derived from: the United States Census, surveys conducted by the GED Testing Service, and from previous surveys developed by the researchers to study adult basic education in Iowa. Subsequent to final survey development, a draft copy of the survey was reviewed by a panel of researchers and ABE practitioners from: Western Iowa Tech Community College, the University of Wisconsin, the University of Georgia, and the GED Testing Service. As a final step, minor modifications were made to promote clarity.

Survey Administration

The follow-up survey was administered by mail during the spring of 1991. Thirty-two percent of the surveys (2,425) were returned as undeliverable. After mailing a follow-up letter urging survey return to 4,624 initial non-respondents, a total of 1,597 returns were received for an unadjusted response rate of twenty-one percent and an adjusted response rate of thirty-one percent. The unadjusted response rates for the three follow-up time cohorts were nearly the same: twenty-two percent for the 1980 time cohort, twenty-one percent for the 1985 time cohort, and twenty-one percent for the 1988 time cohort.

Sources of Bias

Given the response rate to the follow-up survey, the possibility of response bias existed. To determine the source of response bias, if any, a short follow-up version (non-respondent survey) of the original survey was administered by mail to 600 randomly selected non-respondents (200 per time cohort) with a promise of a five dollar payment for the return of the survey. Two-hundred and seven responded for a response rate of thirty-five percent. Initial non-respondents who completed the non-respondent survey were then compared with respondents to the follow-up survey in regards to: enrollment in the ABE program, employment status, income, last grade of school attended, number of children nineteen years of age or older, age, and gender. Only two of these variables showed significant differences between groups at the .01 level: age, and number of children nineteen years of age or older. The mean age for the follow-up survey respondents was 43.7 while the mean age of the non-respondent follow-up survey respondents was 41.0. The mean number of children nineteen years of age or older for follow-up survey respondents was 3.0, which in all probability was a surrogate for age. The comparable figure for the non-respondent group was 2.3.

Since these results suggested age-related response bias, a second analysis was conducted as a cross check. In this second analysis, the reported ages of those who responded to the follow-up survey were compared to the ages of the total sample as recorded on their applications at the time they took the GED Tests. While the mean age in 1990 by respective time cohort (1980, 1985, 1988) was 40.2, 37.7, and 35.6 for the total sample, the comparable figures for the follow-up survey respondents were 45.7, 43.4, and 41.9. This represents a difference of 5.5, 5.7, and 6.3 years respectively.

These results suggested that while there was no response bias in respect to such factors as gender, income and educational level, there was some bias in respect to age. Although younger subjects were under-represented, this factor was taken into account in data analysis.

Limitations

The most serious limitation of this study was the lack of a control or relevant comparison group of adults who had earned traditional high school diplomas and/or who had dropped out of high school and had not earned GED diplomas. For reasons of confidentiality, we were unable to secure the names and addresses of those who failed the GED Tests. To obtain a representative sample of traditional high school graduates or drop outs, who had not passed the GED Tests, was simply beyond our means. As a result, it is difficult to know conclusively whether reported gains were the result of earning a GED diploma or whether they were the result of other unknown factors. To ameliorate this problem, we have reported relevant comparison data when available and have statistically controlled for the intervening effects of age and gender when possible.

It should also be noted that the analysis relied on self-reported data. Thus, our conclusions necessarily are based on the assumption that the research subjects responded truthfully and accurately. The findings, conclusions, and generalizations formulated from this study are limited to Iowa's GED graduate population.

Findings

The following findings apply to Iowa's GED graduate population between just before they passed the GED Tests and 1990.

Employment and Economic Benefits

Employment

- **The employment rate increased substantially.**

  While nineteen percent of the respondents were unemployed and seeking work prior to passing the GED Tests, only nine percent were unemployed and seeking work in 1990. Although fifty-four percent were employed for pay prior to earning their GED diplomas, seventy-one percent were employed for pay in 1990. This represented an increase of seventeen percentage points.

- **Employment increased most dramatically for younger GED graduates.**

  For those under age thirty, paid employment increased twenty-two percentage points (forty-eight percent to seventy percent); for those in their thirties paid employment increased twenty-three percentage points (fifty-eight percent to eighty-one percent); for those in their forties paid employment increased nineteen percentage points (fifty-seven percent to seventy-six percent). For those age fifty or older, paid employment increased eight percentage points (fifty percent to fifty-eight percent).

- **Paid employment gains were greater for women than for men.**

  Women gained twenty-two percentage points (forty-seven percent to sixty-nine percent); men gained eleven percentage points (sixty-seven percent to seventy-eight percent) for paid employment.

- **Gains in employment were substantially greater than the state average.**

  While only four percent of the respondents became unemployed between passing the GED Tests and 1990, seventy-six percent maintained employment. Twenty percent of those who were unemployed and seeking work, before passing the GED Tests, were employed for pay in 1990.

  In comparison, the Iowa Department of Economic Development reported that the employment rate for Iowa increased approximately two percent between 1980 and 1990.

Hours Worked Per Week

- **The number of hours GED graduates worked per week increased.**

  For all respondents, the number of hours worked per week increased from 19.8 before passing the GED Tests to 27.1 in 1990.

  For those who were employed before passing the GED Tests and in 1990, the gains were smaller but still statistically significant (37.3 to 38.3 hours per week). In comparison, the Iowa Department of Economic Development reported the average number of hours worked per week for private industry was 33.7 in 1989.

  Of those who were employed before passing the GED Tests and in 1990, seventeen percent worked fewer hours per week, fifty percent worked the same number of hours, and thirty-three percent worked more hours.

Job Skill Level and Job Satisfaction

- **Job skill level increased significantly.**

  Job skill level was measured by a five-point scale on which 1 indicated low job skill level and 5 indicated high job skill level. The mean job skill level increased from 2.8 before passing the GED Tests to 3.5 in 1990.

- **Job skill level increased with age.**

  For those under age thirty, the mean reported job skill level increased 1.1 percentage points (2.4 to 3.5) between passing the GED Tests and 1990. The job skill level, of those age fifty and older, increased .4 percentage points (3.1 to 3.5).

- **Although men tended to work in more highly skilled jobs than women, gains in job skill level were nearly equal for both sexes.**

  The mean reported job skill level for women increased 0.6 percentage points (2.7 to 3.3), while the job skill level for men increased 0.7 percentage points (2.9 to 3.6).

- **Job satisfaction increased significantly.**

  Job satisfaction was recorded on a three-point scale with 1 indicating low satisfaction and 3 indicating high satisfaction. Between passing the GED Tests and 1990, mean job satisfaction increased from 2.0 to 2.4. While only one quarter of the respondents reported high job satisfaction before passing the GED Tests, nearly half (forty-nine percent) reported high job satisfaction in 1990.

Income

- **Personal income increased substantially.**

  While sixty-nine percent of the sample had low incomes (between zero and $20,000) before passing the GED Tests, only forty-seven percent had low incomes in 1990. In addition, twenty-nine percent had moderate incomes (between $20,000 and $40,000) before passing the GED Tests, whereas forty-five percent had moderate incomes in 1990. Converted from interval level data, mean personal income increased from $12,404 before passing the GED Tests to $17,764 in 1990 resulting in an overall mean increase of forty-three percent.

- **For all GED graduates, including those who were in the labor force and those who were not; personal income, adjusted for inflation, decreased six percent between passing the GED Tests and 1990. However, adjusted hourly private industry earnings for all Iowans decreased over ten percent between 1980 and 1990.**

  Adjusted personal income declined from an average of $18,971 before passing the GED Tests to $17,764 in 1990, a decline of approximately six percent.

- **Changes in adjusted personal income were influenced by employment status.**

  For the small number (N=36) of those who lost employment between passing the GED Tests and 1990, adjusted personal income declined. For those who maintained employment before passing the GED Tests and 1990 (N=680), adjusted personal income declined, but only slightly (about one percent). For those who were unemployed and seeking work before passing the GED Tests and 1990 (N=53), adjusted personal income increased. For those who gained employment, between passing the GED Tests and 1990 (N=153), adjusted personal income increased approximately thirty percent.

Welfare Status

- **Dependence on welfare, as the primary source of income, decreased dramatically.**

  Of the 192 respondents who received welfare prior to passing the GED Tests, 135 (seventy percent) had terminated welfare in 1990. Sixty-five (five percent) of those who did not receive welfare before passing the GED Tests did receive welfare in 1990.

Employment Benefits

- **The receipt of employment benefits, an indicator of job quality and reduced dependence on publicly subsidized health and welfare programs, increased substantially.**

  Before passing the GED Tests, sixty-two percent of the respondents were enrolled in health insurance programs, fifty-one percent had life insurance, and seventeen percent were enrolled in

pension programs. In contrast, in 1990 seventy-four percent were enrolled in health insurance programs, sixty-seven percent had life insurance, and thirty-three percent were enrolled in pension programs.

Savings and Property

- **Personal savings increased.**

  Although fifty-two percent of the respondents reported they had no savings before passing the GED Tests, only thirty percent reported no savings in 1990. While thirteen percent had saved $5,000 or more before passing the GED Tests, twenty-two percent had saved $5,000 or more in 1990.

- **Property acquisition, as measured by home ownership, increased.**

  Prior to passing the GED Tests, fifty-four percent of the respondents reported they owned their own homes, while in 1990, seventy percent reported they owned their own homes.

Higher Education

- **Earning a GED diploma enabled many GED graduates to enroll in higher education.**

  In 1990, seventy-seven (five percent) of the respondents were attending two-year colleges, one hundred and nine (seven percent) had graduated from two-year colleges, twenty-eight (two percent) were attending four-year colleges, and twenty-two (two percent) had graduated from four-year colleges. In total, two hundred and four respondents (twelve percent) were enrolled in or had graduated from institutions of higher education.

Children's Education

- **The high school graduation rate for the children of GED graduates compared favorably with the Iowa state high school graduation rate.**

  Eighty-five percent of the respondents' children, nineteen years of age or older, had graduated from high school. As reported by the Iowa Department of Economic Development, the high school graduation rate for Iowa was 86.4 percent in 1987-1988.

- **The rate of enrollment in higher education for children, nineteen years of age or older, was substantially higher than that of their parents who were GED graduates.**

  While twelve percent of those who passed the GED Tests were enrolled in or had graduated from two-year colleges, twenty-two percent of their children nineteen years of age or older were attending or had graduated from two-year colleges. Similarly while four percent of those who

earned GED diplomas were enrolled in or had graduated from four-year colleges, fifteen percent of their children nineteen years of age or older were enrolled in or had graduated from four-year colleges.

Perceptions

- **GED graduates generally perceived that passing the GED Tests helped them obtain employment and economic benefits.**

For those who gained employment between passing the GED Tests and 1990, forty-five percent reported that earning a GED diploma helped them "very much" to obtain employment and thirty-two percent reported that earning a GED diploma helped "some".

For those who gained more skilled employment, thirty percent reported that earning a GED diploma helped them to perform better in their work "very much", and thirty-four percent replied that it helped "some".

For those whose incomes increased between passing the GED Tests and 1990, thirty-five percent reported that earning a GED diploma helped "very much", and thirty-two percent said that it helped "some".

Finally, those who enrolled in higher education, seventy-seven percent felt that earning a GED diploma helped them to attend college "very much", and fifteen percent thought that it helped "some".

Effects Over Time

A change score scale, ranging in value from -1 to +1, was developed to measure the magnitude of benefits gained as a result of passing the GED Tests. For example, if an individual gained a benefit between passing the GED Tests and 1990, the individual received a score of one. If an individual maintained a benefit before passing the GED Tests and 1990, the individual received a score of zero. If a respondent lost a benefit over the time period, the respondent received a score of minus one. Therefore, change scores could thus vary from minus one to plus one, and all scores over zero represented benefits gained. The change scores were then compared by each time cohort (those who passed the GED Tests in 1980, 1985, and 1988) using a one-way analysis of variance.

In addition to the change score scale, two indices were created: the Economic Benefits Index and the Job Quality Index. The Economic Benefits Index is a composite of changes in: employment, income, property acquisition, and savings. The Job Quality Index is a composite of changes in: hours worked per week, job skill level, job satisfaction level, and employment benefits (health insurance, life insurance, and pensions). The variables measured in the time effects analysis included changes in: employment, hours worked per week, job skill level, job satisfaction,

personal income, welfare termination, home ownership, enrollment in health insurance, life insurance and pension programs, personal savings, job quality, and economic benefits. The results are as follows:

- **On the average, GED graduates showed gains in all employment and economic benefits between passing the GED Tests and 1990.**

  Change scores were positive for all benefits measured and for all time cohorts. There were no statistically significant declines in benefits over time.

- **Gains in employment, welfare termination, and home ownership were relatively stable over time.**

  The differences in change scores, by time cohort for these benefits, were not significantly different. Thus, while these benefits were lasting, they did not increase significantly over time.

- **Gains in hours worked per week were greatest between the two year and five year time cohorts after passing the GED Tests.**

  Gains in hours worked per week increased significantly between two years and five years after passing the GED Tests and remained relatively constant between five and ten years.

- **Gains in the following areas increased steadily and significantly over time: job skill level, job satisfaction, personal income, enrollment in health insurance, life insurance and pension programs, personal savings accounts.**

  Change scores for these variables were greater five years after passing the GED Tests than they were two years after passing the GED Tests. Likewise, change scores were greater ten years after passing the GED Tests than they were five years after passing the tests.

- **Job quality gains increased steadily and significantly over time.**

  Change scores for the Job Quality Index for two, five, and ten year time cohorts were 2.3, 2.9, and 3.4 respectively.

- **Economic benefits generally increased steadily and significantly over time.**

  Change scores for the Economic Benefits Index for two, five, and ten year time cohorts were 1.3, 1.8, and 2.1 respectively.

Maturation Effects

- **Over time, the benefits obtained by passing the GED Tests were not due solely to maturation.**

  Lack of a control group raises the issue of whether the gains in benefits noted are due to passing the GED Tests or to gains that may normally accrue to individuals as their age increases. To address this issue, a general linear model analysis (SAS, Proc GLM) was conducted with time cohort, age and time/age interaction being entered into the analysis. Chronological age was converted into four age groups: under age thirty (N=245), the thirties (N-402), the forties (N=459), and age fifty and above (N=491).

  Except for gains in life insurance, the effects of time cohort (which measures the impact of earning a GED diploma) were greater than the effects of age (a measure of maturation effects).

Non-Economic Quality of Life Benefits

GED graduates' reports of non-economic quality of life benefits, obtained as a result of passing the GED Tests, were elicited by a question which asked: "How much has earning the GED helped you do the following"? Responses were recorded on a three-point Likert scale with one indicating "very little", two indicating "some", and three indicating "very much". The results are as follows:

Parenting

- **A majority of GED graduates, who by virtue of their age, were most likely to have school-age children reported that earning a GED helped them assist their children with school work.**

  Of those in their thirties, the age group which was most likely to have school-age children, a majority of respondents (fifty-four percent) reported that passing the GED Tests helped them to assist their children in school "some" or "very much". In comparison, thirty-one percent of those in their late teens and twenties, who were likely to have pre-school children or no children, responded that earning a GED diploma helped them to assist their children in school "some" or "very much". For those age fifty or older, who were most likely to have grown children, the comparable figure was thirty-four percent.

- **A majority of GED graduates reported that earning a GED diploma helped them to be better parents.**

  Fifty-eight percent of the respondents reported that earning a GED diploma helped them to be better parents, a figure which is probably suppressed since the sample included those who did not have children as well as those who did. Forty-three percent of the respondents in their late teens and twenties, the age group which is least likely to have children, felt that passing the GED Tests helped them to be better parents "some" or "very much". In contrast, sixty-one percent of those in their thirties replied that passing the GED Tests helped them to be better parents "some" or "very much". The comparable figures for those in their forties and age fifty or older are sixty-two percent and fifty-nine percent respectively.

Contributions to Community or Church

- **Increased contribution to the community or church was the least frequently obtained non-economic quality of life benefit.**

  About one-third (thirty-four percent) of the respondents reported that earning a GED Diploma helped them contribute more to their community or church.

Self-Esteem

- **On the average, GED graduates perceived increased self-esteem as the most significant benefit they obtained from earning a GED diploma.**

  Over three quarters (seventy-seven percent) of the respondents replied that earning a GED diploma had increased their self-esteem "very much". Ninety-five percent reported that earning a GED diploma had improved their self-esteem "some" or "very much". Gains in self-esteem were by far the largest self-perceived gains reported.

General Quality of Life

- **GED graduates perceived that earning a GED helped them improve the general quality of their lives.**

  Three quarters (seventy-five percent) of the respondents reported that earning a GED diploma helped them improve their lives in general "some" or "very much". A majority (fifty-one percent) reported that earning a GED diploma had helped them become more economically secure "some" or "very much".

The Adult Basic Education Program

The effectiveness of the ABE program was measured in two ways. First, those respondents who had enrolled in the ABE program (N=781, forty-nine percent of the respondents), were asked how helpful the ABE program had been in assisting them in meeting their personal goals and acquiring the knowledge necessary to pass the GED Tests. Second, learners' satisfaction with the ABE program was measured by asking them to indicate how many people they had encouraged to enroll in the ABE program . They were also asked how satisfied they were with various features of the ABE program that previous research had shown to be important. The results are as follows:

- **GED graduates perceived that enrolling in the ABE program substantially helped them pass the GED Tests.**

  Seventy-three percent of those who enrolled in the ABE program reported that attending classes helped them pass the GED Tests "very much". Twenty-two percent said the classes had helped "some", and only five percent felt that enrolling in ABE classes had not helped them pass the GED Tests.

- **The perception, of a majority of GED graduates, was that attending ABE classes helped them acquire the necessary knowledge to pass the GED Tests.**

  About two-thirds (sixty-four percent) of the respondents reported that attending ABE classes was "somewhat" or "very" helpful in assisting them to read better.

  Fifty-nine percent said that enrolling in ABE classes had "somewhat" or "very much" helped them to write better.

  Eighty-one percent replied that ABE classes had helped "somewhat" or "very much" to learn mathematics better.

  Sixty-four percent responded that ABE classes had helped "somewhat" or "very much" to learn about government and law.

  Sixty-seven percent answered that ABE classes had helped "somewhat" or "very much" to learn about science.

- **A substantial majority, of GED graduates who enrolled in the ABE program, affirmed that attending classes helped them meet their own goals.**

  Fifty-nine percent of the respondents replied that attending ABE classes was "very helpful" in preparing them to meet their own goals, whereas twenty-eight percent reported enrolling in ABE classes was "somewhat helpful" in meeting their own goals.

- **Over three-quarters of the GED graduates encouraged someone else to enroll in the ABE program.**

  Sixty-two percent of the respondents encouraged between one and five people to enroll in the ABE program. Nine percent encouraged between six and ten people, and six percent encouraged more than ten people.

- **GED graduates' satisfaction with various features of the ABE program was very high.**

  The respondents' reported their satisfaction with various aspects of the ABE program as follows:

	Not satisfied	Somewhat satisfied	Very satisfied
Teachers	3%	16%	81%
Books and materials	2%	24%	74%
The things taught	4%	32%	65%
Other students	11%	49%	40%
Class location	6%	27%	67%
Class times	3%	22%	75%

The trend indicated that "satisfaction with teachers" was the highest (ninety-seven percent were "somewhat" or "very" satisfied), and "satisfaction with other students" was lowest (eighty-nine percent were "somewhat" or "very" satisfied).

Conclusions

- **Within the limitations of this study, the preponderance of evidence indicated that those who passed the GED Tests in Iowa benefited substantially from earning their GED diplomas.**

  Between just prior to passing the GED Tests and 1990, respondents reported substantial and statistically significant gains in: employment, hours worked per week, job skill level, job satisfaction, personal income, reduction in welfare, job quality, property acquisition, and personal savings. Although there were declines in adjusted personal income for GED graduates, adjusted personal income for all Iowans declined between 1980 and 1990. Although these benefits obviously accrued to individuals, they also accrued to the general citizenry of Iowa in terms of: enhanced economic productivity, an increased tax base, and a reduction of public subsidy to health and welfare programs.

- **Over time, all benefits were lasting and positive.**

  The gains in hours worked per week were greatest between two and five years after passing the GED Tests and then leveled off between five and ten years. The reported gains in: job skills, job satisfaction, personal income, savings and indices of job quality, and economic benefits increased steadily over time. Thus, as an individual and social investment, the benefits of earning a GED diploma accrue with interest. In general, respondents who obtained benefits replied that passing the GED Tests helped to obtain these benefits.

- **The overwhelming majority, of GED graduates who enrolled in the ABE program, reported that attending ABE classes had helped them acquire the requisite knowledge necessary to pass the GED Tests.**

  The respondents were asked the extent to which enrolling in ABE class had helped them achieve their own goals. Eighty-seven percent reported that enrolling in ABE classes had helped them achieve their own goals "somewhat" or "very much". Learners' satisfaction with the ABE program was very high, suggesting that the program did meet learners' needs and preferences.

  These findings lead us to conclude that obtaining a GED diploma is a sound personal and social investment and that the ABE and GED programs indeed merit continued public support.

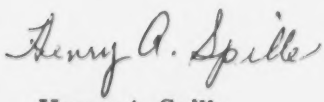
Foreword

Recent years have seen an increasing emphasis on accountability in public education. At the same time, and perhaps anticipating the results from studies of the impact of education, reformers have presented many highly publicized models for improving education at various levels.

In this context, it is natural for a state to undertake a major study of the impact of its GED (high school equivalency) program. This first comprehensive long-range study of this well known program addresses questions from three significant audiences:

- **Policy makers and legislators:** How much is a high school education worth for adults? To whom? Is it a good investment for the state and community?
- **Adult education teachers and GED Examiners**: Does what we do make a long-term difference? To whom? And, in what way(s)?
- **Potential adult education and GED students**: Is it worth my while to restart my education? As a consumer, what am I likely to gain by doing so? Are there any disadvantages or likely disappointments?

By carefully selecting a representative sample of persons who earned GED diplomas and locating current addresses for an unusually high proportion of them, the researchers have set a new methodological standard for such studies. In an expertly crafted survey, involving all categories of likely outcomes, they have gathered a comprehensive picture of the long-term effects of earning a GED diploma. Their findings represent the most credible picture to date of the impact of participating in the GED program.



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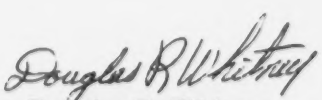

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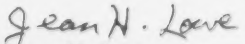

Jean H. Lowe
Director
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Preface

The Iowa Department of Education, in conjunction with **Dr. Hal Beder** from Rutgers University and Iowa's fifteen community colleges, initiated a two, five, and ten-year follow-up study of Iowa's GED graduates (i.e. those persons who received the Iowa High School Equivalency Diploma in 1980, 1985, and 1988.)

The study was conducted to document the qualities of excellence and purpose in Iowa's GED instructional and testing programs. Iowa's GED instructional and testing programs have established a national reputation for the characteristics of: excellence, accountability, quality, and research paradigms. This study provides another measure of the quality, accountability, and excellence of Iowa's community college continuing education system.

For adults who did not complete high school, the Tests of General Educational Development (GED Tests) provide an opportunity to earn a high school credential. The GED program, sponsored by the American Council on Education, enables Iowa's citizens to demonstrate that they have acquired a level of learning comparable to that of Iowa's high school graduates. It provides a second chance opportunity for those adults who did not have, or could not take advantage of, a "first chance opportunity" to complete a traditional program of studies at the secondary school level. Recognized nationwide by employers and institutions of higher learning, the GED program has increased employment, education, and earning opportunities for more than ten million adults since 1942. Each participating state, province, and territory administers the GED Tests and issues a credential based on its own minimum score requirement. The GED testing program thus enables more than 450,000 adults every year to obtain high school equivalency certificates — about fifteen percent of all high school diplomas issued in the United States. The GED testing program continues to offer a substantial number of people the opportunity to qualify for a high school equivalency credential. Since 1971, the program has enabled over eight million adults to obtain formal recognition of their educational development through their attainment of a high school equivalency credential.

The state of Iowa has participated in the GED testing program since its inception in 1942. The Iowa High School Equivalency Diploma has been issued by the Iowa Department of Education since 1966. During the time frame from 1966 through April, 1992, the state GED testing program has provided a "second chance opportunity" for over 160,000 Iowa citizens who completed the GED Tests. The state of Iowa has issued over 118,500 high school equivalency diplomas during the same time frame — approximately twelve - fifteen percent of all secondary credentials issued in Iowa. Thus, the GED testing program has positively impacted the economic development emphasis in the state by allowing the GED graduates of Iowa to become positive, contributing members in the work force and also within the larger society.

This study was designed to determine the immediate, intermediate, and long-range impact of Iowa's GED instructional and testing program on Iowa's GED graduates. The follow-up study examined the impact from a two, five, and ten-year perspective.

This is the first known state level study to measure long-term impact of GED graduates. As a result, the methodology and procedures used in this study can serve as a model for other states or provinces who wish to replicate the Iowa study. This study will also provide base line data against which future GED graduate follow-up studies may be used as a basis of comparison.

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This study was completed through the cooperation, guidance, interest, and assistance of many individuals who devoted their time, energy, and expertise in all areas of the project. The principal investigators express appreciation to the individuals and groups who participated and assisted in making the study a successful reality.

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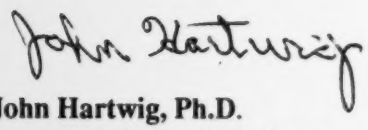

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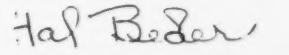

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Overview

Introduction

The purpose of this study was to determine the short-term (two-year), intermediate (five-year), and long-term (ten-year) impact of earning a high school equivalency diploma (GED) in Iowa. The study was sponsored by the Iowa Department of Education. Dr. Hal Beder, of Rutgers University, was the principal investigator.

Background

The Problem

In the past several years, the adult literacy problem has become an issue of serious public concern. Estimates of the incidence of adult functional illiteracy range as high as twenty percent of the adult population (Adult Performance Level Project, 1975), and in 1980, 51.8 million American adults lacked high school diplomas (1980 Census). While the present costs of adult low literacy are high, the future costs may be intolerable. Indeed, as the widely circulated *Workforce 2000* report has warned (Johnson and Packer, 1987), because of demographic trends and inadequate preparation, future workers are likely to be ill-prepared to function in a highly technological society. Consequently, unless the adult literacy problem is solved, our nation's ability to compete internationally will become increasingly threatened.

While the negative impact of low literacy on economic productivity has been at the forefront of public concern, there are other social costs as well. For democracy to be effective, citizens must cast intelligent, informed votes. Thus, we need a literate citizenry if, as a nation, we are to face up to the difficult decisions of the future. Likewise, since low literacy constrains social and economic mobility, adult low literacy promotes social inequality.

In Iowa, as in most states, literacy education is provided to adults through the adult basic education program (ABE). Delivered through Iowa's fifteen community colleges, this program served 38,998 individuals during fiscal year 1991. High school certification, the goal of the overwhelming majority of ABE participants (Beder & Valentine, 1987), is provided through the American Council on Education's GED Testing program.

To earn a GED diploma, adults must pass five different tests (Writing Skills, Social Studies, Science, Interpreting Literature and the Arts, Mathematics) and in doing so: "must outperform a substantial proportion—between twenty-five and fifty-one percent—of a national sample of graduating seniors (participating jurisdictions set their own specific standard)" (Webb, 1991 p. 14). Generally speaking, the skills required to pass the GED Tests are among the same skills employers indicate are necessary for occupational performance. The passing the tests is also a good indicator of human capital potential

(Webb, 1991). About 700,000 adults take the GED Tests each year; in 1989 more than 375,000 passed (Baldwin, 1990). In the same year, 7,027 Iowa adults took the tests, and eighty-nine percent passed (Iowa Department of Education: Division of Community Colleges, 1990).

The GED Testing program, provides access to high school certification for Iowa adults who lack a diploma. The ABE/GED instructional program provides access to the instruction adults need to pass the tests. By virtue of their goals, the ABE and GED programs are vital components of Iowa's postsecondary educational system. But are these programs effective? Do they provide opportunity to mature adults who, for whatever reason, dropped out of high school; and do they increase the skills which are requisite for further education and economic productivity? It was the purpose of this study to provide some answers to these questions.

The Iowa Context

In many respects Iowa's citizens are well off; worker productivity is high, crime rates are low, and homes are affordable. Iowa ranks third in the United States in longevity, and in 1989, unemployment was at a ten-year low. No Iowan is more than twenty-five miles from a hospital. In 1987, 86.4 percent of Iowa's high school students graduated; the fifth highest graduation rate in the United States (Iowa Department of Economic Development, 1991). In 1987, 56.8 percent of Iowa's high school graduates enrolled in college (Pogue, Neumann and Forkenbrock, 1991). Iowa has also ranked first in the nation in ACT and SAT scores for the past several years (Iowa Department of Economic Development, 1991).

Yet, while Iowa compares favorably with other states in respect to quality of life, there are still problems. As Pogue, Neumann and Forkenbrock (1991) noted:

> Iowa's labor force is less fully utilized today than it was in the 1970s. Both unemployment and involuntary part time employment were higher in 1990 than in 1979, and they have increased as a result of the current recession (p. 4).

In addition, out-migration of the workforce is a problem particularly among the youngest and most educated workers. As the ***Des Moines Register*** reported:

> Iowa lost nearly five percent of its population during the past decade, one of only four states with such a loss. But it was the depth and breadth of decline which was breathtaking: 92 of Iowa's 99 counties lost population, and more than half declined by ten percent or more .... The common denominator of all those counties is their dependence on one of two things: cash grain farming or farm-based manufacturing. (Pins & Anthan, 1991, p. 1)

During the 1980s, real wages in Iowa declined relative to national earnings (Pogue, Neumann & Forkenbrock, 1991). Iowa ranks twenty-fifth in the nation in welfare recipients (Iowa Department of Economic Development, 1991). Also, over 329,000 Iowa adults, age eighteen and over, have not graduated from high school (1990 Census projections).

Maintaining a high standard of living, and solving social and economic problems, are clearly important goals for Iowans. Education will play a critical role in achieving them. From a policy perspective, programs which address these goals must meet at least two standards of accountability: accessibility, and impact. In regard to accessibility, programs must be available to those who need them. In respect to impact, programs must demonstrate that they benefit both society and their clients. Furthermore, programs must reach out to those who are the neediest, the least affluent, and the least educated.

Goals

The central goal of this study was to assess the impact of earning a GED Diploma in Iowa. The study was guided by the following questions:

- To what extent does earning a GED diploma provide employment and economic benefits to both individuals and society?

- To what extent does earning a GED diploma provide quality of life benefits other than those directly related to employment and economic performance?

- To what extent does the ABE/GED program assist learners to acquire the requisite knowledge necessary to pass the GED Tests and to meet their own goals? To what extent are learners satisfied with the ABE/GED programs?

Employment and Economic Benefits

The assumption that adult basic education and high school completion instructional programs benefit both individuals and society in terms of: better employment, increased income, increased productivity, and a reduction of public assistance is a central rationale for public subsidy of these programs. Thus, it is not surprising that most state and national impact studies have measured impact on these dimensions (Kent, 1973; Development Associates, 1979; Darkenwald & Valentine, 1984; Boggs, Buss & Yarnell, 1979; Walker, Ewart & Whaples, 1981; Beder & Valentine, 1987). However, previous studies have been limited by a basic conceptual flaw. Specifically, to our knowledge, no study has investigated long term employment and economic benefits of earning a GED diploma. Consideration of long term benefits is crucial, as it is quite possible that short term benefits differ from long term benefits in both magnitude and kind. In recognition of this possibility, this study looked at benefits obtained two, five, and ten years after successful completion of the GED Tests.

The employment and economic benefits were measured by thirteen variables: employment status, hours worked per week, job skill level, job satisfaction, income, welfare status, home ownership, savings, enrollment in health, life insurance and pension programs, children's educational attainment, and enrollment in higher education. The gains in these variables represent both individual and social benefits. Individuals gain by increasing personal wealth and economic security. Society gains through: enhanced worker productivity, an increased tax base, and a reduction in dependency on publicly subsidized social programs.

To refine our analysis of employment and economic benefits, we have constructed two indices. The first index, the Economic Benefits Index, is the aggregate of gains in: employment, income, savings, and property (as measured by gains in home ownership). The second index, the Job Quality Index, is designed to measure the quality of employment and is defined as: gains in hours worked per week, job skill level, job satisfaction, and employee benefits as measured by enrollment in health insurance, life insurance, and pension programs.

Non-Economic Benefits

Participation in the adult basic education and GED instructional programs is voluntary. For this reason, and because the obstacles to participation can be many (Beder, 1991), adult clients will participate only if these programs meet important personal needs. It follows that the adult basic education and GED instructional programs can obtain their social goals only if adult learners are able to obtain their own personal goals.

For many adults who seek a GED diploma, employment and economic gains are of relatively low priority (Beder & Valentine, 1987; Darkenwald & Valentine 1984). Many participate simply to: improve themselves, to contribute to their communities more effectively, or to help their children in school (Beder & Valentine, 1990). While obtaining such benefits may not contribute directly to economic growth and productivity, obtaining them does contribute to the general quality of life and does motivate participation in the ABE and GED instructional programs. For these reasons, measuring non-employment and economic benefits is critically important.

Adult Basic Education Program

The overriding goal of the Iowa ABE/GED instructional program is to assist learners to acquire the skills and knowledge they need to become more productive, self-sufficient citizens. To achieve this goal, the program provides basic literacy and numeracy instruction to learners whose literacy level ranges from total illiteracy to near high school proficiency. High school certification is the goal of the great majority of Iowa's ABE students, however, and for this reason our assessment of the ABE/GED program focuses on its success in preparing learners to pass the GED Tests. The assessment is limited by the fact that only those who had passed the GED Tests (GED graduates) are included in the sample.

Methods and Procedures

Sample

As previously mentioned, no large scale study, to date, has been successful in measuring the long term impact of GED completion. The major reason is quite simple. Since GED graduates are a mobile population, it has been impossible to locate sufficient numbers of research subjects as time passes. With the advent of this study, we have overcome this problem.

In Iowa, the same identification number is used for both the GED Tests application and for driver's license records (N = 2,513,057) which include current addresses. Current addresses were obtained for all individuals who passed the GED Tests in calendar years 1980, 1985, and 1988 by matching the identification number for both sets of records. Then, a random sample of 2,500 GED graduates, for whom current addresses had been acquired, was drawn for each of the three follow-up cohorts resulting in a total sample N of 7500. Because the identification number was used to identify individuals, even females who had changed their names due to marriage were included in the sample.

There are two potential sources of sample bias. First, individuals without driver's licenses were excluded from the sample. This is not a serious limitation, however, since the overwhelming majority of Iowa's adults, over age eighteen, possess driver's licenses (Iowa Department of Economic Development, 1991). Second, individuals who have migrated from Iowa are excluded from the sample. Since Iowa's out-migration is substantial (about eleven percent between 1980 and 1985) and since younger, more educated adults are more likely to leave the state (Pogue, Neumann and Forkenbrock, 1991), this source of sample bias may have resulted in under-representation in younger age groups and higher educational levels.

Instrumentation

A six page forty-item follow-up survey was developed to operationalize the variables included in the study. [See Appendix A]. The survey included six sections. The first section asked respondents to compare their lives in 1990 to their lives just before they passed the GED Tests in respect to a series of employment and economic variables such as: employment, income, job skill level, job satisfaction, sources of income, savings, and further education. The remaining sections dealt with: educational history, perceived results of earning a GED diploma, satisfaction with the adult basic education program, personal background, and methods of preparing to take the GED Tests.

Items included, in the follow-up survey, were derived from: the United States Census, surveys conducted by the GED Testing Service, and from previous surveys developed by the researchers to study adult basic education in Iowa. Subsequent to final survey development, a draft copy of the survey was reviewed by a panel which included: ABE practitioners from Western Iowa Tech

Community College, the Iowa Department of Education, and researchers from the University of Wisconsin, the University of Georgia, and the GED Testing Service. As a final step, minor modifications were made to promote clarity.

Survey Administration

The follow-up survey was administered by mail during the spring of 1991 to a random sample of 7,500. Thirty-two percent of the surveys (2,425) were returned as undeliverable. After mailing a follow-up letter urging survey return to 4,624 initial non-respondents, a total of 1,597 returns were received for an unadjusted response rate of twenty-one percent and an adjusted response rate of thirty-one percent. [See Appendices B and F]. The unadjusted response rates for the three follow-up cohorts were nearly the same: twenty-two percent for the 1980 cohort, twenty-one percent for the 1985 cohort, and twenty-one percent for the 1988 cohort.

Sources of Bias

Given the response rate to the follow-up survey, the possibility of response bias existed. To determine the source of response bias, if any, a short version (non-respondent survey) of the follow-up survey was administered by mail to 600 randomly selected non-respondents (200 per time cohort) with a promise of a five dollar payment for the return of the survey. [See Appendix C]. Two-hundred and seven responded for a response rate of thirty-five percent. Initial non-respondents, who completed the non-respondent survey, were then compared with respondents to the follow-up survey in regards to: enrollment in the ABE program, employment status, income, last grade of school attended, number of children age nineteen or over, age, and gender. Only two of these variables showed significant differences between groups at the .01 level: age, and number of children age nineteen or older. The mean age for follow-up survey respondents was 43.7, while the mean age of the non-respondent survey group was 41.0. The mean number of children, age nineteen or older for follow-up survey respondents, which is related to age (r=.39), was 3.0. The comparable figure for the non-respondent survey group was 2.3.

Since these results suggest age-related response bias, a second analysis was conducted as a cross check. In this second analysis, the reported ages of those who responded to the follow-up survey were compared to the ages of the total sample as recorded on their applications at the time they took the GED Tests. While the mean age in 1990 by time cohort (1980, 1985, 1988) was 40.2, 37.7, and 35.6 for the total sample; the comparable figures for follow-up survey respondents were 45.7, 43.4, and 41.9, a difference of 5.5, 5.7, and 6.3 years respectively.

These results suggest that while there was no response bias in respect to such factors as: gender, income, and educational level; there is some bias in respect to age. Younger subjects were under-represented, and this was taken into account in data analysis procedures.

Limitations

The most serious limitation of this study was the lack of a control or relevant comparison group of adults who had earned traditional high school diplomas or who had dropped out of high school and had not earned GED diplomas. For reasons of confidentiality, we were unable to secure the names and addresses of those who failed the GED Tests. In order to obtain a representative sample of traditional high school graduates or drop outs, who had not passed the GED Tests, was simply beyond our means. As a result, it is difficult to know conclusively whether reported gains are the result of earning a GED diploma or whether they are the result of other unknown factors. To compensate for this problem, we have reported relevant comparison data when available and have accounted for the intervening effects of age and gender when possible.

It should also be noted that the analysis relied on self-reported data. Thus, our conclusions are based on the assumption that the research subjects responded truthfully and accurately. The findings, conclusions, and generalizations formulated from this study are limited to Iowa's GED graduate population.

Findings

Employment and Economic Impact

The impact of earning a GED Diploma on employment and economic variables was measured in two ways. First, we asked our research subjects to indicate their status just before they passed the GED tests, and in 1990, on a series of employment and economic variables. Given these variables, we created the previously discussed Economic Benefits Index and Job Quality Index.

The second measure of impact was our subjects' self-report of the results of passing the GED tests. Subjects were asked; "How much has earning the GED helped you to do the following?" Response options, relevant to a discussion of employment and economic gain, were recorded on three-point Likert scales. They were: "get a job or better job", "increase your income", "perform better in your job", "attend college", and "obtain vocational training".

The findings will be discussed in two parts. The first part focuses on employment and economic impact for the total sample; which includes cohorts of individuals who passed the GED Tests in 1980, 1985, and 1988. The second part focuses on benefits obtained over time by comparing the differences among the three time cohorts.

Impact for the Total Sample

Our analysis begins with a comparison of our subjects' performance on employment and economic indicators just before they passed the GED Tests and in 1990. It should be remembered that we are examining the aggregate of three groups here: those who passed the tests in 1980 (N=560), 1985 (N=520), and 1988 (N=517). To account for the influence of age and gender, differences are discussed according to these variables as well.

Employment Status

As table one indicates, those who passed the GED tests gained substantially in employment.

Table 1

Changes in Employment Status Between Just Before Passing the GED Tests and 1990

Employment Status*	Before Passing N	Before Passing Percent	In 1990 N	In 1990 Percent	Change Before/1990 Percent
Not employed, not seeking work	304	(20)	190	(12)	(-8)
Not employed, but seeking work	298	(19)	137	(9)	(-10)
Employed, but not for pay	112	(7)	129	(8)	(+1)
Employed for pay	825	(54)	1097	(71)	(+23)

*Difference significant at the .0001 level, chi square.

While nineteen percent of the respondents were unemployed and seeking work prior to earning a GED diploma, only nine percent were unemployed in 1990. Although, fifty-four percent were employed for pay prior to earning the GED diploma, seventy-one percent were employed for pay in 1990.

Employment increased most dramatically for younger GED graduates. For those under thirty, the percent of those reporting paid employment increased twenty-two percentage points (forty-eight to seventy percent); for those in their thirties the incidence of paid employment increased twenty-nine percentage points (fifty-eight to eighty-one percent), and for those in their forties paid employment increased nineteen percentage points (fifty-seven to seventy-six percent). Paid employment increases were smaller for those over fifty. For this group, paid employment increased eight percentage points (fifty to fifty-eight percent). Paid employment gains were greater for women (forty-seven to sixty-nine percent) than for men (sixty-seven to seventy-eight percent).

The above figures include those who were not employed and not seeking work in 1990 and hence were not in the labor force. When these individuals (N=190, 12.2 percent) are deleted; we find that only 37 (four percent) of our subjects, who were employed for pay prior to passing the GED Tests, were unemployed and seeking work in 1990. In contrast, 690 (seventy-six percent) maintained paid employment in both time periods, and 184 (twenty percent) who were unemployed but seeking work

became employed for pay. These gains are striking when we consider that the employment rate for Iowa increased approximately two percent between 1980 and 1990 (Iowa Department of Economic Development, 1991).

Hours Worked Per Week

When "hours worked per week" is considered for all respondents, and when "hours worked per week" for those who were not employed for pay is computed as zero, "hours worked per week" increased from 19.9 hours before passing the GED Tests to 27.1 in 1990; a statistically significant ($p < 001.$) gain of 7.2 hours. Those under thirty gained 11.3 hours; those in their thirties gained 10.2 hours; those in their forties gained 7.7 hours; and those fifty and older gained 2.2 hours. The mean hours worked per week for men was 27.1 before passing the GED Tests and 34.1 in 1990, a gain of seven hours. For women, the mean hours worked per week was 16.4 before passing the GED Tests and 23.5 in 1990, a gain of 7.1 hours.

For those who were employed, both before they passed the GED Tests and in 1990, there are small but statistically significant ($p < .001$) gains in the mean hours worked per week (37.3 to 38.3); although both figures are higher than the state private industry average for 1989 of 33.7 (Iowa Department of Economic Development, 1991). Of those who were employed before passing the GED Tests and in 1990, 113 (seventeen percent) worked fewer hours before they passed the GED Tests than in 1990; 333 (fifty percent) worked the same number of hours; and 227 (thirty-three percent) worked more hours.

Job Skill Level and Job Satisfaction

Those who were employed, both before passing the GED Tests and in 1990 (N=690), were asked to describe the skill levels of their jobs for both time periods. Responses were recorded on a five point Likert scale with 1 indicating low skill and 5 indicating highly skilled. Table 2 presents the results. [See page 14 for Table 2].

Clearly the gains are substantial. Before passing the GED tests, thirty-eight percent of the subjects reported that their jobs were at a low or moderately low skill level (responded with 1 or 2), while in 1990 only thirteen percent held low-skill jobs. While only twenty-four percent of the subjects worked in skilled or highly skilled jobs prior to passing the GED tests (responded with 4 or 5), forty-seven percent worked in skilled jobs in 1990.

Although the mean job skill level was the same for all age groups (under age thirty, thirties, forties, and age fifty and older) in 1990 (3.5 on the five-point scale), the mean skill level before passing the GED Tests was lowest for those under age thirty (2.4), and highest for those age fifty and older (3.1). Thus, gains in skill level increase as age increases. Although men tend to work in more highly skilled jobs than women, changes in job-skill level for men (2.9 to 3.6) and women (2.7 to 3.3) are nearly equal.

Table 2

Changes in Job Skill Level Between Just Before Passing the GED Tests and 1990

Job Skill Level		Before Passing N	Before Passing Percent	In 1990 N	In 1990 Percent	Change Before/1990 Percent
Low	1	94	(14)	20	(3)	(-11)
	2	167	(24)	65	(10)	(-14)
	3	259	(38)	281	(41)	(-3)
	4	122	(18)	211	(31)	(+13)
High	5	44	(6)	107	(16)	(+10)
Mean job skill level*		2.8		3.5		

*Differences significant at the .0001 level. T-test for paired comparisons (t=15.30).

As Table 3 indicates, there were also substantial gains in job satisfaction between the time subjects passed the GED Tests and 1990 for those who were employed during both time periods. Job satisfaction was recorded on a three-point scale with 1 indicating "not satisfied," 2 indicating "somewhat satisfied," and 3 indicating "very satisfied".

Table 3

Changes in Job Satisfaction Between Just Before Passing the GED Tests and 1990

Job Satisfaction		Before Passing N	Before Passing Percent	In 1990 N	In 1990 Percent	Change Before/1990 Percent
Low	1	181	(27)	56	(8)	(-19)
	2	344	(50)	305	(44)	(-6)
High	3	158	(23)	329	(48)	(+25)
Mean job satisfaction*		2.0		2.4		

*Differences significant at the .0001 level. T-test for paired comparisons (t=13.53).

Before passing the GED Tests, twenty-seven percent of the sample indicated low job satisfaction while in 1990 less than ten percent indicated low job satisfaction. While twenty-three percent of the sample reported high job satisfaction before passing the GED Tests, nearly half reported high job satisfaction in 1990.

As with job skill level, the mean job satisfaction level for 1990 was nearly the same for all age groups (under thirty = 2.4, thirties = 2.4, forties = 2.3, fifty and older = 2.5). However, the mean job satisfaction level, prior to passing the GED Tests, is lowest among younger subjects and increases as age increases (under thirty = 1.7, thirties = 1.9, forties = 2.0, fifty and older = 2.2). Thus, gains in job satisfaction increase as age increases. Although, prior to passing the GED Tests, men and women were equally satisfied with their jobs; women show greater gains than men in job satisfaction level (women's gain = .47, men's gain = .36).

Personal Income

Gains in personal income, defined as subjects' yearly income from all sources before income taxes, is a somewhat complicated issue as there are three ways to measure gains. The first is raw income as reported by the individual; the second is adjusted income controlled for inflation and measured in constant dollars, and the third is comparative performance. Comparative performance considers income in relation to income increases or declines in the general population. To provide as comprehensive analysis as possible, we have used all three measures.

As Table 4 demonstrates, raw personal income increased substantially between the time subjects earned their GED diplomas and 1990. Mean raw income increased from $12,404 just before passing the GED Tests to $17,764 in 1990 resulting in an overall mean increase of forty-three percent.

Table 4

Changes in Personal Income Between Just Before Passing the GED Tests and 1990

Income*	Before Passing N	Before Passing Percent	In 1990 N	In 1990 Percent	Change Before/1990 Percent
None	339	(23)	153	(10)	(-13)
1-10,000	684	(46)	564	(37)	(-9)
10,001-20,000	276	(19)	462	(30)	(+11)
20,001-30,000	142	(10)	221	(15)	(+5)
30,001-40,000	30	(2)	81	(5)	(+3)
40,001-50,000	5	(.3)	30	(2)	(+1.7)
50,001 or more	5	(.3)	14	(.9)	(+.6)
Mean income*	$12,404		$17,764		
Adj. mean income*	$18,971		$17,764		

*Differences significant at the .0001 level. T-test for paired comparisons (for income, t=20.71; for adjusted income, t=-3.84). Mean income and adjusted mean income represent conversions from interval level data.

The picture changes, however, when we consider income adjusted for the effects of inflation. To account for inflation, raw personal income was adjusted according to the national consumer price index (1990 = base year; 1980 = 1.59, 1985 = 1.21, 1988 = 1.10). When personal income is converted from interval level to a mean, the adjusted mean personal income for 1990 for all subjects was $17,764. The adjusted mean income, before passing the GED Tests was $18,971, resulting in a net decline of 6.4 percent. This decline might raise cause for concern unless the adjusted incomes of all Iowans also declined. When we consider comparative performance, this is precisely the case. As Pogue, Neumann and Forkenbrock (1991) report, adjusted average hourly earnings in private industry for all Iowa residents declined over ten percent between 1980 and 1990.

Paired T-tests show that the adjusted mean personal incomes of subjects under age thirty increased significantly ($p < .001$) between the time they passed the GED Tests and 1990, while the adjusted mean incomes of those in their thirties remained about the same ($p > .05$). The adjusted mean personal incomes of those in their forties and those fifty or older declined significantly, however, with the most dramatic decline being in the age group fifty or more (including retirees). Clearly, age is a factor which mediates income gain. Gains occurred among the youngest groups, which have the greatest economic potential, while declines in real earnings were evident among older age groups. The adjusted personal incomes of men declined significantly ($p < .001$) between passing the GED Tests and 1990 while the adjusted personal incomes of women remained basically the same.

The incomes reported in Table 4 are for all respondents, both employed and unemployed, and as such do not account for employment effects. To account for employment effects, we must consider four groups: those who lost employment (employed for pay before taking the GED Tests, unemployed and seeking work in 1990), those who maintained employment (employed for pay in both time periods), those who maintained unemployment (unemployed, seeking work in both time periods) and those who gained employment (unemployed, seeking work before passing the GED Tests, employed for pay in 1990). Table 5 portrays the results.

Table 5

Changes in Income Before Just Passing the GED Tests and 1990 Accounting for Employment Effects

Employment Group	Before Passing	Before 1990 (adjusted)	In 1990	N
Lost employment	$15,000	$22,231	$13,888	36
Maintained employment	$17,040	$22,461	$22,262	680
Maintained unemployment	$9,423	$13,395	$15,151	53
Gained employment	$9,352	$13,357	$18,814	183

As might be expected, the small number of those who lost employment between the time they passed the GED Tests and 1990 also lost income. While the incomes of those who maintained unemployment and gained employment increased both in raw and adjusted terms, the gains in adjusted income ($5,457) were greatest for those who gained employment. While those who maintained employment earned more than the other groups, in adjusted dollars they lost an average of $199 between the time they passed the GED Tests and 1990.

Sources of Income

Table 6 portrays changes in the sources of income.

Table 6

Changes in the Sources of Income Between Just Before Passing the GED Tests and 1990

Sources of Income	Before Passing N	Percent	In 1990 N	Percent	Change Before/1990 Percent
Job or self-employment	898	(56)	1111	(70)	(+14)
Another's job	576	(36)	490	(31)	(-7)
Investments	74	(5)	147	(9)	(+4)
Welfare	192	(12)	122	(8)	(-4)
Other	190	(12)	230	(14)	(+2)

All differences (chi square) significant at the .001 level.

The differences between the time of just before passing the GED Tests and 1990 show decreased dependency on others for economic resources. The reliance on one's job or self-employment increases from fifty-six percent to seventy percent; whereas, reliance on another's job declines from thirty-six percent to thirty-one percent.

The data presented on welfare status in Table 6 are somewhat misleading as they pertain to the total sample—both those who were on welfare and those who were not. If we consider only those respondents who were on welfare before passing the GED Tests (N=192), we find that 135 (seventy percent), had terminated welfare in 1990, and 57 (thirty percent) remained on welfare in 1990. Sixty-five (five percent) of those who did not receive welfare, before passing the GED Tests, did receive welfare in 1990.

Employment Benefits

It is important to consider employment benefits for two reasons. First, employment benefits are a good measure of job quality. Second, the obtainment of employment benefits provides a safety net, a cushion, which reduces dependence on publicly subsidized health and welfare programs. Employment benefits are measured here by: enrollment in health insurance, life insurance, and pension programs (other than Social Security). Table 7 shows the difference in enrollment between just before passing the GED Tests and 1990.

Table 7

Changes in Employment Benefits Between Just Before Passing the GED Tests and 1990

Category	Before Passing N	Before Passing Percent	In 1990 N	In 1990 Percent	Change Before/1990 Percent
Has health insurance	987	(62)	1182	(74)	(+12)
Has life insurance	815	(51)	1077	(67)	(+16)
Has pension (not counting Social Security)	265	(17)	531	(9)	(+16)

All differences (chi square) significant at the .001 level.

The gains in enrollment in health insurance, life insurance, and pension programs are clearly substantial. The gains are significant ($p < .001$) for all age groups. The incidence of enrollment in these programs, both before passing the GED Tests and in 1990, increases steadily with age. For example, fifty-five percent of those under age thirty had health insurance in 1990, fifty-six percent had life insurance, and twenty-seven percent were enrolled in pension programs. In contrast, eighty-three percent of those age fifty and older had health insurance, seventy-two percent had life insurance, and thirty-seven percent were enrolled in pension programs. The gains in employment benefits, however, are inversely related to age; differences in the incidence of employment benefits between just before passing the GED Tests and 1990 become smaller as age progresses.

While the gains are significant ($p < .001$) for both men and women, in 1990 women were more likely than men to have health insurance (seventy percent of men, seventy-six percent of women); men were more likely to have pensions (forty-two percent of men, twenty-nine percent of women) and life insurance (sixty-nine percent of men, sixty-six percent of women).

Savings and the Acquisition of Property

As Table 8 shows, gains in savings and property acquisition (as measured by home ownership) are substantial.

Table 8

Changes in Savings and Home Ownership Between Just Before Passing the GED Tests and 1990

Category	Before Passing N	Before Passing Percent	In 1990 N	In 1990 Percent	Change Before/1990 Percent
Savings*					
none	794	(52)	456	(30)	(-22)
1-1,000	371	(24)	479	(31)	(+7)
1,001-5,000	160	(11)	254	(17)	(+6)
5,001-10,000	75	(5)	113	(7)	(+2)
10,001 or more	125	(8)	225	(15)	(+7)
Owns home*	858	(54)	1105	(69)	(+15)

*Significant (chi square) at .001 level.

While more than half of the sample had no savings prior to earning a GED, less than one-third had no savings in 1990. Differences in savings, prior to earning the GED diploma and 1990, are significant for all age groups ($p < .001$). Whereas savings, both before passing the GED Tests and in 1990, increase steadily as age increases. The percent of gain increases only slightly for each age group. The gains in savings were nearly equal for men and women.

Home ownership, a measure of property acquisition, likewise increased substantially between passing the GED Tests and 1990. As with savings, home ownership, both before passing the GED Tests and in 1990, increases with age; however, gains in home ownership between the two time periods decline with age. For those less than age thirty, the incidence of home ownership before passing the GED Tests and 1990 increased twenty-eight percent. The reported gains for those in their thirties, forties, and fifty and older were twenty-four percent, twelve percent, and six percent respectively.

Higher Education

Not only does enrollment in higher education enhance future worker earnings and productivity, but it also indicates a willingness to invest one's income increments in one's future. Table 9 portrays enrollment in higher education.

Table 9

Enrollment in Higher Education

Higher Education Status	N	Percent
Attending two-year college	77	(5)
Graduated two-year college	109	(7)
Attending four-year college	28	(2)
Graduated four-year college	22	(2)
Total participation in higher education*	204	(12)

*Defined as those who enrolled in higher education. This measure eliminates duplication (e.g. an individual who graduated from a two-year college and was now attending a four-year college is counted only once).

Twelve percent of the sample invested in higher education, a benefit which could not have been obtained easily without earning the GED diploma. Enrollment in higher education was highest for those in their thirties (seventeen percent) and lowest for those age fifty and over (five percent); enrollment rates for those under thirty and those in their forties are thirteen percent and twelve percent respectively. Enrollment rates for men and women are nearly the same (twelve percent for men as compared to eleven percent for women).

Children's Education

The impact of parents' earning a GED diploma on their children's education is a powerful measure of the intergenerational economic benefits of passing the GED tests. As such it suggests economic gains that extend far into the future.

Subjects, who had children over nineteen years of age (mean number of children = 3.0), were asked the following questions: "how many had graduated from high school", "how many were attending or had graduated from a two-year college", and "how many were attending or had graduated from a four year college"?

Eighty-five percent of the respondents' children, age nineteen or older, had graduated from high school. This figure compares favorably with the high school graduation rate for Iowa which was 86.4 in 1990 (Iowa Department of Economic Development, 1991). However, since the method used for computing high school graduation rates in this study differ slightly from the method used by the state, the comparison is necessarily rough.

The high school graduation rate for GED graduates' children increased as parents' age increased. Graduation rates are: seventy-seven percent for those under thirty, seventy-nine percent for those in their thirties, eighty-five percent for those in their forties, and eighty-seven percent for those age fifty or older.

Twenty-two percent of GED graduates' children were attending or had graduated from two-year colleges; whereas, fifteen percent were attending or had graduated from four-year colleges. As with high school graduation, children's participation in higher education increases with parents' age. The children of male GED graduates are more likely to enroll in higher education than those of female GED graduates.

The rate of enrollment in higher education for children (age nineteen or older) was substantially higher than that of their parents who earned GED diplomas. While twelve percent of those who passed the GED Tests were enrolled in or had graduated from two year colleges; twenty-two percent of their children, age nineteen or older, were attending or had graduated from two-year colleges. Similarly, while four percent of those who earned GED diplomas were enrolled in or had graduated from four-year colleges; fifteen percent of their children, nineteen years of age or older, were enrolled in or had graduated from four-year colleges.

Perceived Benefits

The data presented, thus far, demonstrate that there are substantial gains in most economic and employment indicators between the point in time just before subjects passed the GED tests and 1990. It is difficult to know conclusively, however, whether these gains were due to acquiring the GED or whether they are simply a function of time. In order to partially control for this problem, we asked our subjects; "to what extent earning the GED had helped them to acquire several employment and economic benefits"?

Data were collected on a three point Likert scale with 1 indicating "very little" and 3 indicating "very much". Table 10 presents the results.

Table 10

Subjects' Perceptions of Benefits Gained as a Result of Earning a GED Diploma

	Magnitude			
Benefit	**Very Little**	**Some**	**Very Much**	**Mean**
Get a job or better job	.43	.29	.28	1.85
Increase income	.51	.26	.23	1.72
Perform better in your job	.50	.30	.20	1.69
Attend college	.70	.10	.21	1.52
Obtain vocational training	.67	.16	.17	1.50

On the surface, it would seem that the magnitude of perceived gains in benefits, identified in Table 10, is not great. Obviously there are many factors, other than GED acquisition, which influence gains on these dimensions such as : the state of the economy, family circumstances, and simply luck. It is quite likely that subjects understand that earning the GED is just one of many factors that promote: economic, occupational, and higher education success.

To some extent, however, these figures are misleading in that if an individual did not or could not seek a particular benefit, he or she would score low on that benefit. Consequently, it is important to consider the perceived effects of passing the GED Tests for those who report obtaining employment and economic benefits. When we do so, a very different picture emerges.

For those who gained employment between passing the GED Tests and 1990, forty-five percent perceived that earning a GED helped them to acquire employment "very much" and thirty-two percent perceived that the GED helped "some". For those who gained more skilled employment, thirty percent felt that the GED helped them to perform better on their jobs "very much", and thirty-four percent discerned that it helped "some". For those who gained income; thirty-five percent answered that the GED assisted "very much", and thirty-two percent perceived that it assisted "some". For those who enrolled in higher education; seventy-seven percent perceived that it helped "very much", and fifteen percent replied that it helped "some". Forty-six percent of the sample reported that earning the GED had helped them "very much" to gain at least one of the benefits listed in Table 10.

Effects Over Time

The extent to which the benefits obtained, from earning a GED diploma, vary over time in magnitude and kind is a major issue. Measuring the impact of earning a GED diploma over time accounts for at least three possibilities that measuring short-term impact can not account for. First, it is quite possible that over time some benefits—savings, for example—increase. Second, it is possible that earning a GED diploma has cumulative effects. For example, it is possible that earning a GED diploma enables some individuals to enroll in higher education, which in turn leads to higher earnings which are then invested in higher education for children. Finally, it may well be that it simply takes time for some benefits to accrue. Graduation from a four year college is an example.

Time effects are measured here by comparing three time cohorts, of those who obtained GED diplomas, according to benefits obtained. The first group (N=560) passed the GED Tests in 1980, the second group passed the GED Tests in 1985 (N-520), and the third group passed the GED Tests in 1988 (N=517). Thus, the time interval between passing the GED Tests and 1990 is ten, five, and two years.

The measure we have used to portray time effects are change scores. If individuals lost a benefit between passing the GED Tests and 1990 they received a score of minus one; if they maintained the benefit, they received a score of zero, and if they gained a benefit they received a score of plus one. Therefore, the change score could potentially range from minus one to plus one, and all positive scores represent gains in benefits obtained.

To summarize gains in economic and employment benefits, we have created two indices: the Economic Benefit Index, and the Job Quality Index. Both indices are summative aggregates of the change scores for variables which define the index. The Economic Benefits Index is the aggregate of changes in: employment, income, property acquisition (as measured by home ownership), and savings. If individuals lost on all components of the Economic Benefits Index, they received a score of minus four; if they gained on all components, they received a score of plus four. Therefore, this measure can potentially range from minus four to plus four.

The preceding analysis has demonstrated substantial gains in employment. However, the following question must be posed: are the jobs gained, as a result of earning a GED diploma, better quality jobs than the respondents held before earning a GED diploma? The Job Quality Index, an aggregate of changes in hours worked, job skill level, job satisfaction level, and employment benefits (health insurance, life insurance and pensions), was developed to provide an answer. As with the Economic Benefits Index, the Job Quality Index is a summative index of change scores. If individuals lost on all components of the Job Quality Index, they received a score of minus six; if they gained on all components, they received a score of plus six.

Table 11 portrays the results of the time effects analysis.

Table 11

Mean Change Scores (CS) on Selected Economic and Human Capital Indicators by Time Cohort

Indicator	Time Cohort 1980 N	1980 CS	1985 N	1985 CS	1988 N	1988 CS	Total Sample CS
Employment	278	.15	310	.21	303	.13	.16
Hours Worked	222	.24	221	.23	244	.04*	.15
Job Skills	232	.59	229	.35	250	.23**	.39
Job Satisfaction	230	.43	229	.35	252	.19**	.32
Income	450	.60	442	.42	444	.25**	.38
Welfare Termination @	84	.27	84	.45	89	.10	.27
Home Ownership	478	.68	476	.64	482	.63	.67
Health Insurance	478	.76	476	.67	482	.61**	.69
Life Insurance	478	.69	476	.63	482	.58*	.64
Pensions	478	.37	476	.31	482	.25**	.32
Savings	462	.50	445	.39	461	.21**	.35
Indices							
Job Quality Index	218	3.4	217	2.9	240	2.3**	2.9
Econ. Benefits Index	265	2.1	286	1.8	286	1.3**	1.7

*Significant at the .01 level.

**Significant at the .001 level.

One-way analysis of variance.

@Considers only those who were on welfare before passing the GED Tests.

For all time periods, the mean change scores were positive. Thus, as a whole, GED graduates benefit between just before passing the GED Tests and 1990. In no case do benefits gained decline significantly with time; although there are nonsignificant declines between five and ten years for employment and welfare termination. Thus, the impact of earning a GED diploma is lasting. The GED diploma is not a "quick fix" that results in immediate but faltering benefits.

Increases over time are statistically significant for gains in all benefits except: gains in employment, welfare termination, and home ownership. While gains in hours worked per week are greatest between two and five years and then level off, gains increase steadily over time for: job skill level, job satisfaction, income, enrollment in health insurance, life insurance and pension programs, and savings. Consequently, with the exception of employment, home ownership, and welfare termination; the long term benefits of passing the GED Tests considerably outweigh the short term and intermediate benefits.

Scores over time, on the Economic Benefits Index and the Job Quality Index, show that as a whole, economic benefits increase steadily as time passes. The scores also indicate that over time GED graduates significantly improve the quality of their employment.

The time effects analysis raises a complex issue. In reality, we must consider time on two dimensions. The first dimension, measured by subjects' age, denotes the amount of time that has elapsed in one's life. The second dimension, measured by time cohort, represents the amount of time that has passed between just before passing the GED Tests and 1990—two, five, or ten years.

Age becomes important in respect to maturation effects. As adults age, such variables as income, savings, and job skills are likely to increase as a normal consequence of experience and length of job tenure. In contrast, time cohort represents the specific time period during which the benefits of passing the GED Tests could potentially accrue. Time cohort, then, is a period of time that is nested in the larger period of time represented by subjects' age. While both variables measure an aspect of time, they are relatively independent of one another (r=.12, 1990 chronological age with time cohort).

To portray an accurate picture of time effects, both time-oriented measures must be considered. To accomplish this, a general linear model (SAS, Proc GLM) analysis was conducted for each benefit which varied significantly over time. The variables of time cohort, age, and time/age interaction were entered into the analysis. Age was divided into four time periods: under age thirty (N=245), the thirties (N=402), the forties (N=459), and age fifty and above (N=491). Benefits were measured by the change scores reported in Table 11. Table 12 portrays the results.

Table 12

Time Effects for Time Cohort and Chronological Age

Variable	Time Cohort F	Time Cohort p	Age F	Age p	Time/Age F	Time/Age p
Hours worked	9.40	.0001	6.12	.0004	2.66	.0149
Job skill level	22.40	.0001	12.47	.0001	.35	.9077
Job satisfaction	11.03	.0001	7.64	.0001	.67	.6720
Income	39.71	.0001	7.81	.0001	.51	.8035
Health Insurance	8.30	.0003	13.03	.0001	1.37	.2227
Life Insurance	5.98	.0026	5.09	.0017	1.89	.0788
Pension	7.94	.0004	1.73	.1593	2.14	.0466
Savings	23.60	.0001	.24	.8701	1.64	.1325
Job Quality Index	24.07	.0001	5.84	.0006	2.76	.0017
Econ. Benefits Index	27.20	.0001	2.32	.0735	.78	.5828

Note: Those who were retired were deleted from analysis.

For the variables: hours worked, job skill level, job satisfaction, income, and enrollment in health insurance, differences were highly significant for both time cohort and age. However, the interaction between time and age was not significant. This suggests that while maturation does affect the acquisition of the benefits, so does passing the GED Tests. For enrollment in pension programs, time cohort was significant at the .001 level; and for savings, time cohort was significant at the .0001 level. In both cases, age and time cohort/age interactions were not statistically significant. This suggests that acquisition of these benefits is primarily due to passing the GED Tests and that maturation is not a significant factor.

For the Economic Benefits Index, which summarizes economic gain, time cohort was statistically significant at the .0001 level while age and time/age interaction were not significant. This observation suggests that the economic benefits gained, from passing the GED Tests, are relatively independent from maturation effects. For the Job Quality Index: time cohort is significant at the .0001 level, age is significant at the .001 level, and time/age interaction is significant at the .01 level. This suggests that both time cohort and maturation affect the acquisition of improved job quality.

Conclusion: Employment and Economic Effects

Our findings lead to the conclusion that those who pass the GED Tests gain substantially in respect to employment and economic benefits. Indeed, in most cases, the gains are so strong that it is difficult to imagine any causation other than the effects of passing the GED Tests.

While nineteen percent of the respondents were unemployed and seeking work before they passed the GED Tests, only nine percent were unemployed and seeking work in 1990. In contrast, while fifty-four percent were employed for pay before passing the GED Tests, seventy-one percent were employed for pay in 1990. While the employment rate for Iowa increased approximately two percent between 1980 and 1990 (Iowa Department of Economic Development, 1991), twenty percent of those who were unemployed and seeking work before they passed the GED Tests were employed for pay in 1990.

The average number of hours worked per week increased from 19.9 before passing the GED Tests to 27.1 in 1990. For those who were employed, both before passing the GED Tests and in 1990, the average hours worked per week were greater than the reported state average for private industry. Job skill level and job satisfaction increased significantly between passing the GED Tests and 1990. While mean unadjusted personal income increased over $5000, adjusted income decreased slightly. However, the real earnings for all Iowans also declined between 1980 and 1990. Reliance on another's job as a source of income declined seven percent, between passing the GED Tests and 1990, whereas reliance on one's own job increased fourteen percent. Seventy percent of those who were welfare recipients, before passing the GED Tests, had terminated welfare in 1990. Indicators of job quality such as: enrollment in health insurance, life insurance, and pension programs show substantial and significant gains between passing the GED Tests and 1990 (twelve percent, sixteen percent, and sixteen percent respectively).

While fifty-two percent of the respondents report no savings before passing the GED Tests, only thirty percent report no savings in 1990. Twelve percent, of those who passed the GED Tests, enrolled in higher education; eighty-five percent of their children over age nineteen graduated from high school, twenty-two percent were attending two-year colleges, and fifteen percent were attending or had graduated from four-year colleges.

The analysis of time effects shows that gains in all time periods are positive and that no gains in benefits declined significantly over time. The gains in: job skills, job satisfaction, income, health insurance, life insurance, pension, and savings increased with time. The gains in employment were stable over time, and gains in hours worked increased between two and five years and then leveled off. A summative measure of economic benefits, the Economic Benefits Index, increased steadily with time as did the summative measure of job quality, the Job Quality Index. Clearly the value of passing the GED Tests increases as time passes. Moreover, a secondary analysis, conducted to account for maturation effects, demonstrates; that while maturation does affect acquisition of some benefits, passing the GED Tests generally has a greater effect.

Taken as a whole, the data support the conclusion that passing the GED Tests has a substantial impact on the lives of Iowans who failed to complete traditional high school programs. Furthermore, the impact is lasting and increases as time passes. It follows, that in respect to employment and economic gain, the GED program is a sound personal and social investment.

Non-Economic Benefits

Although the attainment of employment and economic benefits is clearly important both to those who receive them and to the citizens of Iowa in general, there are many other benefits that may accrue to those who earn GED diplomas and to their families and communities as well. These potential benefits include: more effective parenting skills, the ability to contribute more to the community, and enhanced self-esteem. [See the Epigraph section (page iii) and Appendix D for qualitative comments by GED graduates].

Not only does obtaining these "other" benefits improve the quality of life, but the desire to obtain them motivates many to participate in the ABE/GED instructional program. Indeed, the research indicates, that for many adult literacy education students, the desire to be: better parents, to contribute more to their communities, and improve themselves in general is more important than the employment and economic benefits they might receive (Beder & Valentine, 1987; Beder, 1991).

Those, who responded to the survey, were asked to indicate to what extent passing the GED Tests had helped them to obtain six quality of life benefits not directly linked to economic performance: helping their children with school, contributing more to community or church, feeling better about themselves, improving their life in general, being more secure economically, and being better parents. The responses were recorded on a three point Likert scale, with 1 indicating "very little" and 3 indicating "very much". Table 13 portrays the results.

Table 13

Perceptions of Non-Economic Benefits Gained as a Result of Passing the GED Tests

Benefit	Very Little N	%	Some N	%	Very Much N	%	Mean
Help children with school	799	(57)	395	(28)	220	(16)	1.59
Be a better parent	612	(42)	435	(30)	403	(28)	1.86
Contribute to community or church	947	(66)	338	(24)	147	(10)	1.44
Feel better about self	78	(5)	281	(18)	1028	(77)	2.72
Improve life in general	377	(25)	505	(34)	619	(41)	2.16
Be economically secure	720	(49)	441	(30)	302	(21)	1.71

Parenting

The impact of passing the GED Tests on parenting is important, because it represents an inter-generational benefit that extends to future generations of Iowans as well as to individuals who pass the GED Tests. Parenting is measured by two variables: "helping one's children in school" and the more global "being a better parent".

When helping children with school is considered, on the surface the data do not seem to indicate substantial benefit. Less than half (forty-four percent) of the respondents reported that passing the GED Tests helped them to assist their children in school "some" or "very much". These data are misleading, however, as they pertain to all respondents; both those who had school-age children and those who did not. It is logical to assume that those without school-age children would have responded "very little" to the question. Consequently, it is likely that the frequencies and means are considerably lower than they would have been if only those who had school-age children had responded.

Data regarding whether respondents had school age children were not collected, and thus, we were unable to analyze parenting variables for a "parents with school-age children" sub-sample. Age, however, provides an approximate substitute. Of those in their late teens and twenties who are likely to have pre-school or no children, about one-third (thirty-one percent) report that passing the GED Tests helped them to assist their children with school work "some" or "very much". Of those age fifty

or older who are most likely to have grown children, the comparable figure is thirty-four percent. In contrast, a majority (fifty-four percent) of those in their thirties who are most likely to have school-age children, reported that passing the GED Tests helped them to assist their children with school "some" or "very much".

A majority of respondents (fifty-eight percent) reported that passing the GED Tests helped them to be better parents, and as with helping children in school, this figure is probably suppressed as it includes those who are childless as well as those who have children. Again, age provides an approximation for having children of parenting age. When we examine those in their late teens and twenties who are the least likely to have children, we find that forty-three percent report that passing the GED Tests helped them to be better parents "some" or "very much". In contrast, sixty-one percent of those in their thirties reported that passing the GED Tests helped them to be better parents. The comparable figures, for those in their forties and fifty plus, are sixty-two percent and fifty-nine percent respectively.

Contribution to Community or Church

About one-third (thirty-four percent) of the respondents reported that passing the GED Tests helped them to contribute to their community or church "some" or "very much". While this is the least frequently achieved non-economic benefit, it is still important, as one-third of those who passed the GED Tests in recent years represents a sizeable number of Iowa residents.

Self-Esteem

When all the benefits reported by those who passed the GED Tests are considered—including those portrayed in Table 10 as well as those discussed here—improved self-esteem emerges as the greatest self-perceived benefit of passing the GED Tests. Over three quarters (seventy-seven percent) of the respondents reported that passing the GED Tests had increased their self-esteem "very much", and ninety-five percent reported that passing the GED Tests had improved their self-esteem "some" or "very much". Moreover, this finding is stable over time. The mean score for improved self-esteem remains the same (2.72) two, five, and ten years after passing the GED Tests. The observation that passing the GED tests results in improved self-esteem is not surprising. In fact, as Beder (1991) noted after reviewing eight credible adult literacy education impact studies, "increased self-concept is the most universal impact of the federal adult literacy program" (p. 116).

The importance of improved self-esteem, as an attained benefit, raises an issue of interpretation. Is improved self-esteem a discrete benefit, unrelated to the attainment of other benefits, or is it an "enabling" benefit; a benefit that is linked to the attainment of employment and economic benefits? To probe this issue, the sample was divided into three groups: those who reported that their self-esteem had not improved as a result of passing the GED Tests, those who reported that their self-esteem had improved "some", and those who reported that their self-esteem had improved "very much". Using the General Linear Method (SAS, Proc GLM), these groups were then compared according to their change scores on: employment, hours worked per week, job skill level, job satisfaction, adjusted income, savings, and job quality. These variables were measured by the prevalence of health insurance, life insurance, and pension. As will be remembered from the section

on employment and economic benefits, change scores vary from minus one to plus one. Individuals who lost a benefit between passing the GED Tests and 1990 were scored minus one; those who maintained the benefit both before passing the GED Tests and 1990 received a zero; and those who gained the benefit between just before passing the GED Tests and 1990 received a plus one.

As Table 14 shows, differences between the groups were not statistically significant for changes in: employment, hours worked, and job skill level. However, differences were significant for: job satisfaction, variables indicative of job quality, and savings.

Table 14

Mean Change Scores for Employment and Economic Variables by Improvements in Self-Esteem

	Groups: Improvements in Self-Esteem		
Variable	**None**	**Some**	**Very Much**
Employment	.93	.93	.97
Hours worked per week	.76	.80	.83
Job skill level	.94	.94	.94
Job satisfaction	.80	.90	.92*
Income	.91	.88	.93
Job quality			
Health insurance	.59	.57	.72**
Life insurance	.55	.53	.67**
Pensions	.19	.27	.34**
Savings	.89	.88	.94**

*Significant at the .05 level.

**Significant at the .01 level.

Although findings support the conclusion that improvements in self-esteem are related, in part, to gains in employment and economic benefits; the results must be interpreted with caution for at least two reasons. First, we do not know the respondents' state of self-esteem before passing the GED Tests. Thus, it is possible that those who reported no improvement in self-esteem, as a result of passing the GED Tests, did so because they had high levels of self-esteem before passing the GED Tests. Second, the findings say little about casualty. Specifically, we do not know: whether the noted increases in economic and employment benefits create increased self-esteem, whether improved self-esteem causes increases in the noted employment and economic benefits, or whether the relationships are interactive.

General Quality of Life

Taken together, general life-improvement and economic security can be conceived as global measures of life quality. Seventy-five percent of the respondents reported that passing the GED Tests had improved their lives in general "some" or "very much", whereas fifty-one percent reported that passing the GED Tests had helped them to become more economically secure. When these two measures are combined to create a crude index of perceived improvement in quality of life, that ranges from a low of two to a high of six, we find that twenty percent report moderate (scale interval=4) increases in life quality as a result of passing the GED Tests, and thirty-five percent report high levels of life improvement (scale intervals=5 or 6). Thus, a majority (fifty-five percent) perceived that their lives had improved as a result of passing the GED Tests.

Effectiveness of the Adult Basic Education/GED Preparation Program

It is possible to divide those who passed the GED Tests into three groups. The first is comprised of those who, although they had not completed high school, were able to pass the tests without study or review. This group is a minority representing twenty-seven percent of the respondents. The second group is comprised of those who reviewed for the tests, but used non-classroom oriented methods of study to do so—methods such as working with tutors, taking practice tests, and studying with friends. The third group (N=781, forty-nine percent) found it necessary to enroll in state and federally supported ABE classes to gain the knowledge and skills necessary to pass the GED Tests. Table 15 describes methods of preparing for the GED Tests.

Table 15

Methods of Preparing to Pass the GED Tests for Those Who Reviewed or Studied

Method	N	Percent
Enrolled in a GED preparation class	781	66
Worked with an individual tutor	120	10
Took an official GED Practice Test	576	49
Studied from a book or manual designed for GED study	834	71
Watched GED study programs on television	43	4
Studied with a family member or friend	235	20
Talked with someone who had taken the tests	147	12
Other	107	10
(For the above, respondents could indicate multiple responses. That is, they could check all methods that applied: unduplicated N=1,177)		
Did not review or study for the GED Tests	420	27

Gains from Attending ABE/GED Preparation Classes

Two thirds of those who prepared for the GED Tests did so by enrolling in formal ABE/GED preparation classes. These classes focus on general literacy acquisition as well as on the knowledge needed to pass the GED Tests. This raises an important question: to what extent did enrolling in ABE/GED classes help individuals to pass the GED Tests and therefore to gain the benefits which have been shown to accrue to those who earned their GED diplomas? Clearly, the best way to address this question would have been to compare those who enrolled in classes and those who did not in respect to whether they passed or failed the GED Tests. Unfortunately, for reasons of confidentiality, we were not able to obtain a sample of those who failed the tests.

The next best course of action was simply to ask those who enrolled in classes and had passed the GED Tests: "how helpful were the GED preparation classes you attended for doing each of the following"? The response options focused on: gains in knowledge tested by the GED Tests as well as general goal attainment. Table 16 portrays the results.

Table 16

Respondents' Perceptions of the Extent to Which Attending ABE/GED Preparation Classes Had Helped Them

Helpful Categories	Not Helpful N	Not Helpful Percent	Somewhat Helpful N	Somewhat Helpful Percent	Very Helpful N	Very Helpful Percent	Mean
Pass the GED Tests	44	(5)	185	(22)	610	(73)	2.67
Learn to read better	289	(36)	319	(40)	196	(24)	1.88
Learn to write better	330	(41)	308	(39)	161	(20)	1.79
Learn to do mathematics better	150	(18)	308	(37)	365	(44)	2.27
Learn about government and law	287	(36)	362	(45)	154	(19)	1.83
Learn about science	265	(33)	365	(46)	173	(22)	1.89
Meet your own goals	106	(13)	232	(28)	484	(59)	2.46

Nearly three-quarters of the respondents reported that attending classes had helped them pass the GED Tests "very much", and ninety-five percent reported that enrolling in classes had helped at least "some". Similarly, nearly three-fifths reported that attending classes had helped them meet their own goals, and eighty-seven percent perceived that attending classes had helped at least "some". Clearly, those who enrolled in ABE/GED preparation classes feel that the program is valuable.

Learning to do mathematics better is the largest subject matter gain, whereby gains in reading, writing, government, and science are about equal in magnitude. In all likelihood, the magnitude of reported gains in subject-oriented knowledge represent program emphases as well as the areas where the students were weakest and needed the most help. These findings lead to the conclusion that; for those who enroll in ABE/GED preparation classes, enrollment is a vital link in the process that culminates in passing the GED Tests and attaining the benefits which GED graduates enjoy.

Learners' Satisfaction With ABE/GED Preparation Classes

Learners' satisfaction with ABE/GED preparation classes was measured in two ways. First, respondents were asked how many people they had encouraged to attend GED preparation classes. Twenty-four percent encouraged no one; sixty-two percent encouraged between one and five people; nine percent encouraged between six and ten people; and six percent encouraged more than ten people. Thus, over three-quarters encouraged at least on person to attend ABE/GED preparation classes. These observations are a testament to the high regard that ABE/GED preparation students have for the program.

Second, respondents were asked to indicate their satisfaction with several features of the ABE/GED preparation classes that previous research had found to be important (Beder & Valentine, 1987). The results are reported in Table 17.

Table 17

Learners' Satisfaction with Various Features of ABE/GED Preparation Classes

Program Feature	Not Satisfied N	Not Satisfied Percent	Somewhat Satisfied N	Somewhat Satisfied Percent	Very Satisfied N	Very Satisfied Percent	Mean
The teachers	24	(3)	135	(16)	698	(81)	2.78
Books and materials	19	(2)	200	(24)	636	(74)	2.72
The things you were taught	30	(4)	263	(32)	540	(65)	2.61
Other students	92	(11)	401	(49)	323	(40)	2.28
The place classes were held	52	(6)	222	(26)	567	(67)	2.61
The time classes were held	23	(3)	186	(22)	635	(75)	2.72

Satisfaction with those program features amenable to the control of program planners is obviously very high. Over ninety percent, of those who enrolled in ABE/GED classes and passed the GED Tests, are at least "somewhat satisfied" with the teachers, materials, class locations, and class times. The respondents also reported that satisfaction with other students is lower but still high. It should be noted, however, that by federal mandate programs are obligated to serve all who choose to enroll. Thus, programs have little or no control over who attends.

Clearly, those who enroll in ABE/GED preparation classes to prepare for the GED Tests feel that the program is highly valuable. This high satisfaction rate, along with other critical features of the program, suggests that it has responded well to learners' needs and preferences.

Conclusion and Observations

Conclusion

The findings of this study evidence the conclusion that the impact of earning a GED diploma in Iowa is substantial. Iowans, who earn GED diplomas, benefit by obtaining the employment, economic, and quality of life benefits measured here. More importantly, perhaps, is the fact that all Iowans benefit from: increased labor force productivity, an increased tax base, and a reduction of dependence on publicly subsidized programs such as welfare. It follows that public subsidy of the adult basic education programs, that prepare learners to pass the GED Tests, is warranted and increased subsidy may be a sound social investment.

Observations

It must be acknowledged, however, that our findings do not represent conclusive "proof" that GED acquisition caused the gains noted here. Conclusive proof, of the impact of earning a GED diploma, would require a definitive study that has yet to be conducted. Such a study would be complex and expensive. To account for social change and economic fluctuations, the definitive study would have to be longitudinal in design; data on a wide range of social and economic impact variables would have to be collected from cohorts of the same individuals over a considerable length of time. A sample would be required that included sufficiently large, representative, comparison groups of: those who dropped out of school and did not earn GED diplomas, those who earned GED diplomas, and those who earned traditional high school diplomas. Such a study would take years to complete.

In the absence of this type of definitive study, policy makers must make decisions on more modest studies such as this one which, by necessity, are limited in scope and design. While such studies can not "prove" the impact of earning a GED diploma, they can provide sound evidence.

The evidence must be weighed and, in respect to this study, there are at least two ways to do this. First, given the lack of relevant comparison groups in this study, one must consider whether the gains in benefits are so large that they could not be attributed logically to any cause other than earning the GED diploma. In our opinion, the gains in benefits found in this study are substantial; so substantial that the cautioned inference that they were caused by GED acquisition is warranted.

Second, the evidence must be weighed in light of other research, which by itself is inconclusive. To our knowledge, virtually every credible study that has measured the impact of ABE/GED preparation education has found substantial impact (Kent, 1973; Development Associates, 1979; Darkenwald & Valentine, 1984; Boggs, Buss & Yarnell, 1979; Walker, Ewart & Whaples, 1981; Beder & Valentine, 1987; Albert & D'Amico-Samuels, 1991). There are fewer studies that pertain specifically to GED acquisition.

Impact studies conducted in Wisconsin (Hayes, 1992) and Georgia (Georgia Department of Technical and Adult Education, Office of Adult Literacy Programs, 1991) suggest substantial impact. A study conducted by the American Council on Education (Baldwin, 1991) demonstrated that almost one half (forty-seven percent) of GED recipients, age eighteen to twenty-four, planned to enter higher education. A longitudinal study, (based on the National Longitudinal Study of Youth) which estimated the return to secondary education for female dropouts (Maloney, 1991), found that while earning a GED did impact positively on recipients earnings, the impact was less than earning a traditional high school diploma. Another study, which also used the National Longitudinal Study of Youth (Cameron & Heckman, 1991), found that earning a GED diploma had little impact on employment and economic impact variables. While both the Maloney and Cameron and Heckman studies included; comparison groups of dropouts who had not earned the GED, and earners of traditional high school diplomas, none of their subjects were over age thirty. Thus, the long-term impact of earning a GED diploma could not be measured.

Clearly additional research is needed if we are to assess the impact of earning a GED diploma conclusively. In the meanwhile, and especially in respect to the state of Iowa, the preponderance of evidence is positive. Both, the GED Testing program and the adult basic education instructional programs which support it, are valuable and deserve public support.

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APPENDICES

APPENDIX A

Follow-Up Survey of GED Graduates

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF EDUCATION
WILLIAM L. LEPLEY, ED.D., DIRECTOR

Dear GED Graduate:

A few years ago you became one of the thousands of proud Iowa residents who, as adults, earned the Iowa High School Equivalency (GED) Diploma by passing the GED tests. The GED program is of vital importance to us in Iowa, and we are constantly trying to improve it.

The Iowa Department of Education, in cooperation with Iowa's community colleges, is conducting a follow-up study of persons who received the Iowa High School Equivalency Diploma. The major purpose of the study is to determine what has happened to Iowa's GED graduates.

You have been randomly selected to respond to a survey of Iowa's GED graduates. Please take a few minutes to complete it and return to the Iowa Department of Education within seven days (1 week) after receiving the survey. To return the survey, simply refold the form with the Iowa Department of Education's address exposed. It is not necessary to provide postage since it is prepaid.

Your responses are important since Iowa's GED graduates are the only people who can answer the survey questions. Please answer all questions as accurately as possible. Your participation will help future Iowa GED graduates. The results of the study will be sent to all of Iowa's newspapers. You may see the press release in your local newspaper at a later date.

Your individual responses will be held in strictest confidence. You may tear off your mailing label along the perforation line to insure the confidentiality of your responses.

Your participation in this study is most appreciated.

Sincerely,

John Hartwig

John Hartwig
Iowa GED State Administrator

JH:po

GRIMES STATE OFFICE BUILDING/DES MOINES, IOWA 50319-0146

IOWA DEPARTMENT OF EDUCATION
FOLLOW-UP SURVEY OF GED GRADUATES

DIRECTIONS

PLEASE MARK YOUR RESPONSES CLEARLY WITH A DARK PENCIL OR PEN. IT IS VERY IMPORTANT THAT YOU ANSWER ALL THE QUESTIONS YOU ARE ASKED TO ANSWER. PLEASE RETURN YOUR SURVEY WITHIN ONE WEEK AFTER RECEIVING IT. ONCE AGAIN—THANK YOU.

SECTION I
LIFE CHANGES

TO BEGIN, THE QUESTIONS IN THIS SECTION ASK YOU TO COMPARE YOUR LIFE NOW TO YOUR LIFE JUST BEFORE YOU PASSED THE GED TESTS.

1. Are you NOW: (Check one of the boxes below.)

- ☐ *1. NOT employed, and NOT seeking a job.*
- ☐ *2. NOT employed, but SEEKING a job.*
- ☐ *3. Employed, but NOT FOR PAY. (For example: volunteer, homemaker)*

[IF YOU CHECKED BOX *1*, *2*, OR *3* ABOVE, GO TO QUESTION 5.]

- ☐ *4. Employed for PAY.*

[IF YOU CHECKED BOX *4*, PLEASE ANSWER QUESTIONS 2, 3 AND 4 BELOW.]

2. How many hours do you usually work per week? _____ *hours*

3. Some jobs do not require many skills while other jobs require specialized skills and knowledge if the job is to be done well. Would you say that your job is low-skilled, highly skilled, or somewhere in between? (Please circle the number between 1 and 5 that best describes the skill level of your job now.)

Low-skilled ←——————→ **Highly skilled**

1 2 3 4 5

4. How satisfied are you with your job now? (Check one of the below.)

- ☐ *1. Not satisfied*
- ☐ *2. Somewhat satisfied*
- ☐ *3. Very satisfied*

282-2397

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5. **JUST BEFORE YOU PASSED THE GED TESTS were you: (Check one of the boxes below.)**

- ☐ *1. NOT employed, and NOT seeking a job.*
- ☐ *2. NOT employed, but SEEKING a job.*
- ☐ *3. Employed, but NOT FOR PAY.*

[IF YOU CHECKED BOX *1*, *2*, OR *3* ABOVE, GO TO QUESTION 9 BELOW.]

- ☐ *4. Employed for PAY.*

[IF YOU CHECKED BOX *4*, PLEASE ANSWER QUESTIONS 6, 7 AND 8 BELOW.]

6. **How many hours did you usually work per week then?** _____ *hours*

7. **Would you say that your job then was low-skilled, highly skilled, or somewhere in between? (Please circle the number between 1 and 5 that best describes the skill level of your job then.)**

Low-skilled ← → **Highly skilled**

1 2 3 4 5

8. **How satisfied were you with your job then? (Check one of the below.)**

☐ *1. Not satisfied* ☐ *2. Somewhat satisfied* ☐ *3. Very satisfied*

9. **Considering your total PERSONAL INCOME, the amount you earned from all sources before income taxes:**

A. What was your total personal income for 1990? (Check one of the below.)

- ☐ *1. No income*
- ☐ *2. $1 to $10,000*
- ☐ *3. $10,001 to $20,000*
- ☐ *4. $20,001 to $30,000*
- ☐ *5. $30,001 to $40,000*
- ☐ *6. $40,001 to $50,000*
- ☐ *7. $50,001 or more*

B. What was your total personal income for the year JUST BEFORE YOU PASSED THE GED TESTS? (Check one of the below.)

- ☐ *1. No income*
- ☐ *2. $1 to $10,000*
- ☐ *3. $10,001 to $20,000*
- ☐ *4. $20,001 to $30,000*
- ☐ *5. $30,001 to $40,000*
- ☐ *6. $40,001 to $50,000*
- ☐ *7. $50,001 or more*

10. **Considering the sources of your personal income:**

A. What are the sources of your personal income NOW? (Check all that apply.)

- ☐ *1. My job or self-employment*
- ☐ *2. The job of another household member*
- ☐ *3. Investments*
- ☐ *4. Welfare, AFDC, disability or other public assistance*
- ☐ *5. Other sources*

B. What were the sources of your personal income JUST BEFORE YOU PASSED THE GED TESTS? (Check all that apply.)

- ☐ *1. My job or self-employment*
- ☐ *2. The job of another household member*
- ☐ *3. Investments*
- ☐ *4. Welfare, AFDC, disability or other public assistance*
- ☐ *5. Other sources*

11. Considering your marital status:

A. What is your marital status NOW?

(Check one of the below.)

- ☐ *1. Married*
- ☐ *2. Separated*
- ☐ *3. Divorced*
- ☐ *4. Widowed*
- ☐ *5. Never married*

B. What was your marital status JUST BEFORE YOU PASSED THE GED TESTS?
(Check one of the below.)

- ☐ *1. Married*
- ☐ *2. Separated*
- ☐ *3. Divorced*
- ☐ *4. Widowed*
- ☐ *5. Never married*

12. Considering the following:

A. Please check all of the following that are true for you NOW.

- ☐ *1. I own a home or real estate.*
- ☐ *2. I have health insurance.*
- ☐ *3. I have life insurance.*
- ☐ *4. Not counting Social Security, I have a pension or annuity.*
- ☐ *5. I am a United States citizen.*

B. Please check all of the following that were true for you JUST BEFORE YOU PASSED THE GED TESTS.

- ☐ *1. I owned a home or real estate.*
- ☐ *2. I had health insurance.*
- ☐ *3. I had life insurance.*
- ☐ *4. Not counting Social Security, I had a pension or annuity.*
- ☐ *5. I was a United States citizen.*

13. Considering your savings, the money you put away for the future or for use in an emergency (for example, savings accounts, stocks, bonds):

A. What is the value of your savings NOW?

(Check one of the below.)

- ☐ *1. no savings*
- ☐ *2. $1 to $1000*
- ☐ *3. $1001 to $5000*
- ☐ *4. $5001 to $10,000*
- ☐ *5. $10,001 or more*

B. What was the value of your savings JUST BEFORE YOU PASSED THE GED TESTS.
(Check one of the below.)

- ☐ *1. no savings*
- ☐ *2. $1 to $1000*
- ☐ *3. $1001 to $5000*
- ☐ *4. $5001 to $10,000*
- ☐ *5. $10,001 or more*

SECTION II
EDUCATION

14. Before you passed the GED tests, how many grades of school had you completed? (Do not count adult education classes.) (Circle one of the numbers to the right.) 1 2 3 4 5 6 7 8 9 10 11 12

15. In what year did you drop out of school? 19____
year

16. The following list of reasons for not completing school are true for many people. For each of the following, indicate how true the reason was FOR YOU. (Circle 1 if it is <u>not true</u>, 2 if it is <u>somewhat true</u> and 3 if it is <u>very true</u>.)

	Not True	Somewhat True	Very True
1. To get a job	1	2	3
2. Not doing well in class	1	2	3
3. Pregnancy/marriage	1	2	3
4. Treated poorly by teachers	1	2	3
5. Problems with other students	1	2	3

(question 16 continued)	Not True	Somewhat True	Very True
6. *Disliked school*	1	2	3
7. *School was not challenging*	1	2	3
8. *Parent/family illness*	1	2	3
9. *High school not available*	1	2	3
10. *Family problems*	1	2	3
11. *Other*	1	2	3

17. On the line below, please enter the number of your MOST IMPORTANT REASON for not completing school from the reasons listed in question 16 above. For example, if your most important reason was to get a job, you would enter a *1*.

My most important reason for not completing school was: _____
enter number of reason

18. How many children do you have who are now 19 years of age or older? _____
number

[IF YOU HAVE CHILDREN 19 YEARS OF AGE OR OLDER, GO TO QUESTION 19.]
[IF YOU DO NOT HAVE CHILDREN 19 YEARS OF AGE OR OLDER GO TO QUESTION 20.]

19. How many of your children 19 years of age or older: (Answer all the following.)

a. graduated from high school? _____ *number*

b. are attending or have graduated from a two year college? _____ *number*

c. are attending or have graduated from a four-year college? _____ *number*

20. Are <u>you</u> now attending a two-year college? ☐ *1. yes* ☐ *2. no*

21. Have <u>you</u> graduated from a two-year college? ☐ *1. yes* ☐ *2. no*

22. Are <u>you</u> currently attending a four-year college? ☐ *1. yes* ☐ *2. no*

23. Have <u>you</u> graduated from a four-year college? ☐ *1. yes* ☐ *2. no*

SECTION III
RESULTS OF PASSING THE GED TESTS

24. How much has earning the GED helped you do the following? (Circle one number for each category, 1 for <u>very little</u>, 2 for <u>some</u>, or 3 for <u>very much</u>.)

	Very Little	Some	Very Much
a. *Get job or better job*	1	2	3
b. *Increase your income*	1	2	3
c. *Perform better in your job*	1	2	3
d. *Help your children with school*	1	2	3
e. *Attend college*	1	2	3
f. *Obtain vocational training*	1	2	3
g. *Contribute more to your community or church*	1	2	3
h. *Feel better about yourself*	1	2	3
i. *Improve your life in general*	1	2	3
j. *Be economically secure*	1	2	3
k. *Be a better parent*	1	2	3

25. Approximately how many people have you encouraged to take the GED tests? (Check one box below.)

1. ☐ No one *2.* ☐ 1 to 5 people *3.* ☐ 6 to 10 people *4.* ☐ More than 10 people

SECTION IV
GED PREPARATION CLASSES

THIS SECTION ASKS ABOUT GED PREPARATION CLASSES. ANSWER THE QUESTIONS IN THIS SECTION ONLY IF YOU ENROLLED IN ABE/GED PREPARATION CLASSES TO PREPARE FOR THE GED TESTS. IF YOU DID NOT ENROLL IN ABE/GED PREPARATION CLASSES, GO TO QUESTION 32.

26. Some people enroll in ABE/GED preparation classes but drop out and enroll again. Others enroll just once. How many times did you enroll in ABE/Ged preparation classes before you passed the GED tests?

_____
number of times

27. When did you complete the ABE/GED preparation program? _____ _____
Month *Year*

28. When did you first enroll in an ABE/GED preparation program? _____ _____
Month *Year*

29. Listed below are some of the things ABE/GED preparation classes help people do. Overall, how helpful were the GED preparation classes you attended for doing each of the following. (Circle one number for each question, either 1 for not helpful, 2 for somewhat helpful, or 3 for very helpful.)

	Not Helpful	Somewhat Helpful	Very Helpful
a. Passing the GED Tests	1	2	3
b. Learning to read better	1	2	3
c. Learning to write better	1	2	3
d. Learning to do math better	1	2	3
e. Learning about the government and law	1	2	3
f. Learning about science	1	2	3
g. Meeting your own goals	1	2	3

30. Approximately how many people have you encouraged to attend GED preparation classes? (Check one box below.)

1. ☐ No one *2.* ☐ 1 to 5 people *3.* ☐ 6 to 10 people *4.* ☐ More than 10 people

31. Considering the LAST GED PREPARATION CLASSES YOU ATTENDED, how satisfied were you with each of the following. (Circle one number for each question, either 1 for not satisfied, 2 for somewhat satisfied or 3 for very satisfied.)

	Not Satisfied	Somewhat Satisfied	Very Satisfied
a. The teachers	1	2	3
b. Books and materials	1	2	3
c. The things you were taught	1	2	3
d. Other students	1	2	3
e. The place where classes were held	1	2	3
f. The times classes were held	1	2	3

SECTION V
PERSONAL BACKGROUND

32. What is your present age? _____ *years*

33. What is your sex? ☐ *1. Male* ☐ *2. Female*

34. Would you describe yourself as being: (Check one of the below.)

- ☐ *1. White, Caucasian*
- ☐ *2. Black*
- ☐ *3. Asian*
- ☐ *4. American Indian*
- ☐ *5. Other*

35. Are you Hispanic ☐ *1. Yes* ☐ *2. No*

36. What is the first language you learned to speak? ☐ *1. English* ☐ *2. Spanish* ☐ *3. Other*

37. Are you retired? ☐ *1. Yes* ☐ *2. No*

SECTION VI
TEST PREPARATION

38. Did you review or study in any way for the GED tests?

- ☐ *1. Yes* [IF YOU MARKED YES, ANSWER QUESTION 39 BELOW.]
- ☐ *2. No* [IF YOU MARKED NO, YOU ARE FINISHED. THANK YOU.]

39. Which of the following describes the way you prepared for the GED tests? (Check all that apply.)

- ☐ *1. I attended a GED preparation class.*
- ☐ *2. I worked with an individual tutor.*
- ☐ *3. I took an official GED Practice Test.*
- ☐ *4. I studied from a book or manual designed for GED study.*
- ☐ *5. I watched GED study programs on television.*
- ☐ *6. I studied with a family member or friend.*
- ☐ *7. I talked with someone who had taken the GED Test.*
- ☐ *8. Other.*

40. Comments:

To return the survey, simply refold the form with the Iowa Department of Education's return address exposed. No postage is necessary. However, please scotch tape to seal the survey before mailing.

THANK YOU. YOUR ASSISTANCE WILL HELP IMPROVE THE IOWA GED PROGRAM.

BEFORE RETURNING, PLEASE SEAL THIS EDGE WITH SCOTCH TAPE.

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO. 781 DES MOINES, IOWA

POSTAGE WILL BE PAID BY ADDRESSEE

BUREAU OF EDUCATIONAL AND STUDENT SERVICES
DEPARTMENT OF EDUCATON
GRIMES STATE OFFICE BUILDING
DES MOINES IA 50309-9968

IOWA DEPARTMENT OF EDUCATION
GRIMES STATE OFFICE BUILDING
DES MOINES, IA 50319

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PAID
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PERMIT NO. 1195

APPENDIX B

Follow-up Letter to GED Graduates

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF EDUCATION
WILLIAM L. LEPLEY, ED.D., DIRECTOR

April 26, 1991

Dear GED Graduate:

Recently you were sent a follow-up survey for completion by Iowa's GED graduates. WE have not, as yet, received your completed survey. Please take a few minutes to complete it and return to the Iowa Department of Education within seven days (one week) after receiving this letter.

Your responses are important since Iowa's GED graduates are the only people who can answer the survey questions. Please answer all questions as accurately as possible. Your participation will help future Iowa GED graduates. The results of the study will be sent to all of Iowa's newspapers. You may see the press release in your local newspaper at a later date.

The GED program is of real importance to us in Iowa, and we are constantly trying to improve it.

Your participation in this study is most appreciated. If you have completed and mailed your survey, disregard this letter.

Sincerely,

John Hartwig

John Hartwig
Iowa GED State Administrator

JH/bse

GRIMES STATE OFFICE BUILDING/DES MOINES, IOWA 50319-0146

APPENDIX C

Follow-Up Survey of Non-responders

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF EDUCATION
WILLIAM L. LEPLEY, Ed.D., DIRECTOR

May 19, 1991

Dear GED Graduate:

As one of the thousands of Iowa adults who have successfully passed the GED tests you understand how vitally important the GED program is to us in Iowa. We are always trying to improve the GED program. For this reason, several weeks ago we sent you a questionnaire that asked about your life since you passed the tests. You were unable to complete this questionnaire. We understand. People are busy and the questionnaire was long.

However, we are now at a point where we desperately need your response. In fact, your response is so important that we are willing to pay you five dollars if you complete this short form and send it back to us (in the enclosed envelope) within one week.

Many thanks. Your assistance will help many other adults who wish to earn their GEDs. Your answers are confidential.

Sincerely,

John Hartwig

John Hartwig
Iowa GED State Administrator

JH/bse
Encl.

• • • •

4. What was your PERSONAL INCOME for 1990, the amount you earned from all sources before income taxes? (Check one of the below.)

1) No income	_____	5) $30,001 to $40,000	_____
2) $1 to $10,000	_____	6) $40,001 to $50,000	_____
3) $10,001 to $20,000	_____	7) $50,001 or more	_____
4) $20,001 to $30,000	_____		

5. What is your marital status? (Check one of the below.)

1) Married	_____	4) Widowed	_____
2) Separated	_____	5) Never married	_____
3) Divorced	_____		

6. Before you passed the GED tests, how many grades of school had you completed (do not count adult education classes)? (Circle one of the below.)

1 2 3 4 5 6 7 8 9 10 11 12

7. How many children do you have who are age 19 or older? _____
Number

8. Your age? _____ 9. Your sex?_____ 1) Male _____ ?) Female _____

10. Please list two things that you feel would help to improve the Iowa GED program.

_____

_____

_____

Please complete the following information if you wish to receive five dollars for completing this questionnaire.

Name: _____
(as it appears on mailing label)

Social Security # _____

Mailing Address: _____
(street)

_____
(city) (state) (zip)

THANK YOU ! ! !

Appendix D

Qualitative Comments by GED Graduates

Differentiated by Two, Five, and Ten Years

Representative Comments By Two-Year GED Graduates

Self Concept

"If I had a chance to start over, I would never quit. I was married all those years and never had to work, till I was 51 years old. Most people are thinking of retiring. Every person who did not graduate, should get their GED. It is a must."

"You can find people to say I regret quitting school you never hear of anyone say: I wished I never got my high school diploma."

"I would love to thank you for giving my life more meaning. I am a certified medication aide. Without GED this would not have been possible."

Instructional Effectiveness

"I don't think they should ever do away with the GED. I was treated well and felt like I accomplished a goal - I definitely felt a feeling of self worth and this also helped me in the classes that followed."

"The teachers are very encouraging! If it wouldn't have been for the teachers I wouldn't have graduated. It made me disappointed I quit school because I believe, had I been encouraged there I could have been a very good student. I really enjoyed being at school and studyirg again."

Economic Impact

"Getting the GED eliminated one of the obstacles in my path for promotion."

"In order to become hired fulltime I needed a GED. Can't believe I didn't do it sooner."

"I'm very glad that I have my GED. If I had not have gotten it I wouldn't have gotten the job that I have now."

Representative Comments By Five-Year GED Graduates

Self Concept

"I was 54 years old when I enrolled in GED preparation classes and completed them in three months. I wanted to do it for my own satisfaction. I feel very good about myself. I am a certified Home-Health Aide and go into homes to help Medicare patients. I love it!"

"I felt my GED course was very rewarding to me, and I'd about given up ever getting a diploma and a tassel. I feel I did real well considering having both mental and physical illness. My family was ever so proud of me. It was a very good course."

"Getting my GED has allowed me to fulfill a longed for dream. Not only do I have a professional position now, but my self esteem is much better."

"I am very grateful for the GED program. It was like a weight off my back when I received my diploma. It boosted my self esteem greatly. I have taken two classes at the local area community college and have six college credits which I am proud of, and I am considering taking more. Thank you for a wonderful program."

Instructional Effectiveness

"The preparation classes were excellent. The teacher was very attentive and light hearted."

"I attended classes at the local junior high school just prior to taking the exams. It was was very helpful."

"I was 54 years old when I received my GED diploma. I surprised myself on many of the tests. Passed some without much study. Had a very good teacher. I dropped out of school in 9th grade because I had a lot of brothers and sisters. Low Income."

Economic Impact

"After going through financial difficulties my GED was an important first step to my financial recovery which included getting my FAA Airframe and Powerplant Mechanics License."

"Try to encourage mothers on ADC or welfare to get their GED and go on for more school. It's good for them and the family. They will like themselves much better."

"I am an assistant director for an ambulance service and also a training officer and CPR instructor for the State of Iowa."

"I am very happy that I took the GED course and graduated. It was a happy day for me. I now still work as a laborer in a factory, but also have my own home interior business part time. I love it and now have the self confidence to do anything I put my mind to. Thanks!!"

Representative Comments By Ten-Year GED Graduates

Self Concept

"I'm glad I had the chance in 1980 to go back and pass the GED. I now feel equal to the class that graduated in '62. For me it meant self worth to know I passed. Thank you!"

"I received great satisfaction and security by receiving my GED. Also, I have a great feeling of accomplishment."

"The GED diploma helped to make me feel that I wasn't stupid because I didn't graduate from high school. It gave me confidence and a feeling of worthiness in life."

"I would advise everyone to take the GED test. The self-satisfaction and confidence is worth everything. I am thinking of going to a two year school and taking some more classes. The feeling is great!"

"I feel very good about myself receiving a GED and hopefully someday I can further my education."

Instructional Effectiveness

"I worked with the people at the local community college and they were very helpful. They also helped me attend college after testing."

"I got the GED diploma for my own satisfaction. Thanks for the good teachers and books to work with."

"I studied and did homework papers which were graded, and took tests, in order to graduate. All my 5 children, parents and close friends attended the ceremony and it was a great accomplishment, and a promise I made for myself to finish. And at this age I am now planning on returning for further schooling."

"Going through the GED classes was the best thing I ever did for myself. I also had excellent teachers to help me."

Economic Impact

"I wouldn't have the job with my present employer without my GED. It was very important for me to get the GED as I wanted our children to understand how important it was to graduate. Thank you!"

"If I didn't have my GED I would not have the job I have now. I also have better self-esteem."

"Because of my GED I was qualified for a grant. I took a college semester business course, became a part time teller at a credit union, and am now the head teller working 40 hours per week with full benefits. Education is the key to a better life!"

"I have never had any problem getting employment having my GED. In fact, most employers are impressed that I stuck with it and graduated, even though I had to drop out of school"

APPENDIX E

News Release

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF EDUCATION
WILLIAM L. LEPLEY, ED.D., DIRECTOR

BULLETIN
from the Iowa Department of Education

Earning GED improves job success, earnings, study shows

(Des Moines—February 17, 1992) Iowans who earn GED diplomas see significant gains in employment, earnings, skill levels and job satisfaction, according to results of a study released today by the Iowa Department of Education.

For 50 years, the General Educational Development certificate has offered high school dropouts across the country a second chance to finish high school and increase their opportunities for getting jobs and continuing their education. The Iowa study is one of the first in the nation to measure the long-term impact of earning a GED. About 1,600 Iowans who earned GED certificates in 1980, 1985 and 1988 were queried to determine the impact the GED had on their careers and quality of life between the time they passed the GED and 1990.

While 19 percent of the respondents were unemployed before passing the GED, only 9 percent were unemployed in 1990. Although 54 percent had been employed before passing the GED, 71 percent had jobs in 1990.

The respondents' personal incomes increased substantially, according to the study. Average personal income rose from $12,404 before passing the GED to $17,764 in 1990, an increase of 43 percent. Adjusted for inflation, respondents' average income decreased 6 percent, although average adjusted income for all Iowans decreased by more than 10 percent between 1980 and 1990.

Far fewer of the GED holders received public assistance payments. Of the 192 people surveyed who received welfare before earning their GED, 135 (70 percent) were no longer on welfare by 1990. Five percent of those who did not receive welfare before passing the GED did receive it in 1990.

Employment benefits had increased substantially for the survey respondents. Before passing the GED, 62 percent had health insurance, 51 percent had life insurance and 17 percent were enrolled in pension programs. In 1990, 74 percent had health insurance, 67 percent had life insurance and 34 percent were enrolled in pension programs.

The respondents also indicated that they had jobs that required more skills and that they were more satisfied with their jobs.

"All the evidence indicates that earning a GED has positive and long-lasting results," said John Hartwig, coordinator of the study for the Iowa Department of Education. "Efforts by educators and family members to encourage adults to get their GED are important because a GED can open doors to jobs and further education that might otherwise be closed. This has always been the philosophy behind the program, but we now have reliable data to document the positive effects."

Most respondents said that earning a GED had affected their lives in other ways, including helping them assist their children with school work, helping them be better parents, and improving their self-esteem, said Hartwig. "These intangible results may be some of the most beneficial," he said. "The respondents said that by far the most significant result the GED had on their lives was in improving their self-esteem."

GRIMES STATE OFFICE BUILDING/DES MOINES, IOWA 50319-0146

Among the other results of the study were:

- Employment gains were greater for women than for men. Before passing the GED, 47 percent of women and 67 percent of men were employed. In 1990, 69 percent of women and 78 percent of men had jobs.

- The average number of hours respondents worked per week increased from 19.8 hours before passing the GED tests to 27.1 hours in 1990.

- Personal savings and home ownership also increased. About half of the respondents reported they had no savings before passing the GED, while less than a third reported no savings in 1990. About half owned their own homes before passing the GED, while 70 percent were home owners in 1990.

- Twelve percent of the respondents were enrolled in or had graduated from two- or four-year colleges in 1990.

- Nearly all (95 percent) respondents who enrolled in an adult basic education program to prepare for the GED exams said the program had helped them pass the tests. The programs are offered mainly by Iowa's 15 community colleges.

The study was conducted in the spring of 1991 by the Department of Education with Hal Beder, associate professor, Rutgers University, New Jersey.

About 5,000 Iowans earn a GED each year by completing a battery of tests in math, writing, natural science, social studies and literature. Nationally, over 430,000 Americans pass the exam annually. The GED is produced by the American Council on Education, a private nonprofit organization.

For more information, contact John Hartwig, adult education consultant, Iowa Department of Education, 515/281-3636; or Hal Beder, associate professor, Rutgers University, 908/932-8086

APPENDIX F

Descriptive Statistics for Variables Included in the Survey

Questionnaire Number*

1. Employment status in 1990.

1) Not employed, not seeking a job.	190	(12.2%)
2) Not employed, but seeking a job.	137	(8.8%)
3) Employed, but not for pay.	129	(8.3%)
4) Employed for pay.	1097	(70.6%)

(missing=44)

For those respondents who were employed for pay in 1990:

2. Hours worked per week. Mean=38.2

(missing/not applicable=473)

3. Job skill level.

Low-skilled	1	40	(3.5%)
	2	127	(11.1%)
	3	476	(41.8%)
	4	326	(28.6%)
Highly-skilled	5	171	(15.0%)

(missing/not applicable=457) Mean=3.4

4. Job satisfaction.

Not satisfied	98	(8.5%)
Somewhat satisfied	492	(42.6%)
Very satisfied	564	(48.9%)

(missing/not applicable=443) Mean=2.4

*The questionnaire number corresponds to the same questionnaire number on the follow-up survey referenced in Appendix A. The total number of respondents was 1,597.

Questionnaire Number

5. Employment status before passing the GED Tests.

1) Not employed, not seeking a job.	304	(19.7%)
2) Not employed, but seeking a job.	298	(19.4%)
3) Employed, but not for pay.	112	(7.3%)
4) Employed for pay.	825	(53.6%)

(missing=57)

For those respondents who were employed for pay before passing the GED Tests:

6. Hours worked per week. Mean=37.2
(missing/not applicable=745)

7. Job skill level.

Low-skilled	1	109	(12.6%)
	2	209	(24.1%)
	3	340	(39.3%)
	4	152	(17.6%)
Highly-skilled	5	56	(6.5%)

(missing/not applicable=731) Mean=2.8

8. Job satisfaction.

Not satisfied	205	(23.7%)
Somewhat satisfied	442	(51.0%)
Very satisfied	218	(25.2%)

(missing/not applicable=731) Mean=2.0

9.A Personal income in 1990.

No income	153	(10.0%)
1-10,000	564	(37.0%)
10,001-20,000	462	(30.3%)
20,001-30,000	221	(14.5%)
30,001-40,000	81	(5.3%)
40,001-50,000	30	(2.0%)
50,000 or more	14	(0.9%)

(missing/not applicable=72)

Questionnaire Number

9.B Personal income before passing the GED Tests.

No income	339	(22.9%)
1-10,000	684	(46.2%)
10,001-20,000	276	(18.6%)
20,001-30,000	142	(9.6%)
30,001-40,000	30	(2.0%)
40,001-50,000	5	(0.3%)
50,000 or more	5	(0.3%)

(missing=116)

10.A Sources of income in 1990.

My job or self-employment	1111	(69.6%)
The job of another household member	490	(30.7%)
Investments	147	(9.2%)
Welfare, AFDC, disability or other public assistance	122	(7.6%)
Other	230	(14.4%)

10.B Sources if income before passing the GED Tests.

My job or self-employment	898	(56.2%)
The job of another household member	576	(36.1%)
Investments	74	(4.6%)
Welfare, AFDC, disability or other public assistance	192	(12.0%)
Other	190	(11.8%)

11.A Marital status in 1990.

Married	1110	(70.7%)
Separated	32	(2.0%)
Divorced	243	(15.5%)
Widowed	63	(4.0%)
Never married	121	(7.7%)

(missing=28)

Questionnaire Number

11.B Marital status before passing the GED Tests.

Married	1042	(67.0%)
Separated	42	(2.7%)
Divorced	191	(12.3%)
Widowed	36	(2.3%)
Never married	245	(15.7%)

(missing=41)

12.A Job quality, property, and citizenship in 1990.

Home ownership	1105	(69.2%)
Have health insurance	1182	(74.0%)
Have life insurance	1077	(67.4%)
Have pension or annuity (not counting Social Security)	531	(33.2%)
Is a US citizen	1526	(95.5%)

12.B Job quality, property and citizenship before passing the GED Tests.

Home ownership	858	(53.7%)
Have health insurance	987	(61.8%)
Have life insurance	815	(51.0%)
Have pension or annuity (no counting Social Security)	265	(16.6%)
Is a US citizen	1485	(92.9%)

13.A Savings in 1990.

No savings	456	(29.9%)
1-1,000	479	(31.4%)
1,001-5,000	254	(16.6%)
5,001-10,000	113	(7.4%)
10,001 or more	225	(14.7%)

(missing=70)

Questionnaire Number

13.B Savings before passing the GED Tests.

No savings	794	(52.1%)
1-1,000	371	(24.3%)
1,001-5,000	160	(10.5%)
5,001-10,000	75	(4.9%)
10,001 or more	125	(8.2%)

(missing=72)

14. Grades of school completed before passing the GED Tests.

Grade	N	Percent	Grade	N	Percent	
1	2	(.1%)	7	27	(1.7%)	Mean=9.7
2	3	(.2%)	8	223	(14.4%)	
3	1	(.1%)	9	321	(20.7%)	
4	3	(.2%)	10	476	(30.6%)	
5	2	(.1%)	11	454	(29.2%)	
6	6	.4%)	12	36	(2.3%)	

(missing=43)

15. Year dropped out of school. Mean year=1969

16. Reasons for not completing school.

Reason	Not True		Somewhat True		Very True	
To get a job	766	(55%)	296	(21%)	326	(24%)
Not doing well in classes	693	(51%)	447	(33%)	219	(16%)
Pregnancy/marriage	835	(61%)	57	(4%)	473	(35%)
Treated poorly by teachers	909	(68%)	276	(21%)	150	(11%)
Problems with other students	1060	(81%)	164	(13%)	93	(7%)
Disliked school	553	(40%)	523	(38%)	320	(23%)
School not challenging	866	(65%)	343	(26%)	127	(10%)
Parent/family illness	1114	(84%)	105	(8%)	113	(9%)
High school not available	1267	(96%)	23	(2%)	35	(3%)
Family problems	818	(59%)	265	(19%)	300	(22%)
Other	635	(55%)	200	(17%)	325	(28%)

Questionnaire Number

17. Most important reason for not completing school.

To get a job	237	(16.2%)
Not doing well in classes	105	(7.2%)
Pregnancy/marriage	442	(30.3%)
Treated poorly by teachers	62	(4.2%)
Problems with other students	27	(1.8%)
Disliked school	157	(10.7%)
School not challenging	35	(2.4%)
Parent/family illness	51	(3.5%)
High school not available	25	(1.7%)
Family problems	151	(10.3%)
Other	168	(11.5%)

18. Number of children age 19 or older. Mean=3.0

(missing/not applicable=954)

For those respondents who have children age 19 or older:

19. Number of children 19 or older who:

Graduated from high school	Mean=2.7
Are attending or have graduated from a two-year college	Mean=1.6
Are attending or have graduated from a four-year college	Mean=1.6

20.	Are you attending a two-year college?	77	(5.1%)
21.	Have you graduated from a two-year college?	109	(7.2%)
22.	Are you attending a four-year college?	28	(1.9%)
23.	Have you graduated from a four-year college?	22	(1.5%)

Questionnaire Number

24. Extent to which earning a GED helped to do the following:

Factor	Very Little		Some		Very Much	
Get a job or better job	629	(43%)	433	(29%)	414	(28%)
Increase your income	754	(51%)	382	(26%)	339	(23%)
Perform better in your job	739	(50%)	439	(30%)	290	(20%)
Help your children with school	799	(57%)	395	(28%)	220	(16%)
Attend college	968	(69%)	147	(10%)	293	(21%)
Obtain vocational training	951	(67%)	229	(16%)	238	(17%)
Contribute more to community or church	947	(66%)	338	(24%)	147	(10%)
Feel better about yourself	78	(5%)	281	(18%)	1028	(77%)
Improve your life in general	377	(25%)	505	(34%)	619	(41%)
Be economically secure	720	(49%)	441	(30%)	302	(21%)
Be a better parent	612	(42%)	435	(30%)	403	(28%)

25. Number of people encouraged to take the GED Tests. Mean=2.1

(missing=19)

26. Number of times enrolled in ABE/GED Preparation classes before passing the GED Tests.

(missing/not applicable=749 Mean=1.2

27. When completed the ABE/GED preparation program.

(aborted due to coding difficulty)

28. When first enrolled in ABE/GED preparation program.

(aborted due to coding difficulty)

Questionnaire Number

29. Extent to which ABE/GED preparation classes helped to:

	Not Helpful		Somewhat Helpful		Very Helpful	
Pass the GED Tests	44	(5%)	185	(22%)	610	(73%)
Learn to read better	289	(36%)	319	(40%)	196	(24%)
Learn to write better	330	(41%)	308	(39%)	161	(20%)
Learn to do mathematics better	150	(18%)	308	(37%)	365	(44%)
Learn about government and law	287	(36%)	362	(45%)	154	(19%)
Learn about science	265	(33%)	365	(46%)	173	(22%)
Meet your own goals	106	(13%)	232	(28%)	484	(59%)

30. Number of people encouraged to attend GED preparation classes.

No one	222	(23.9%)
1-5	570	(61.5%)
6-10	80	(8.6%)
More than 10	55	(5.9%)

31. Satisfaction with GED preparation classes.

	Not Satisfied		Somewhat Satisfied		Very Satisfied	
The teachers	24	(3%)	138	(16%)	698	(81%)
Books and materials	19	(2%)	200	(23%)	636	(74%)
The things taught	30	(4%)	263	(32%)	540	(65%)
Other students	92	(11%)	401	(49%)	323	(40%)
Class location	52	(6%)	222	(26%)	567	(67%)
Class times	23	(3%)	186	(22%)	635	(75%)

32. Age. Mean=43.7

(missing=26)

33. Sex. Male: 523 (33.3%), Female: 1048 (66.7%)

(missing=26)

Questionnaire Number

34. Race.

White, Caucasian	1501	(95.8%)
Black	31	(2.0%)
Asian	13	(0.8%)
American Indian	8	(0.5%)
Other	13	(0.8%)

(missing=30)

35. Hispanic ethnicity. 26 (1.8)

36. First language.

English	1513	(96.9%)
Spanish	9	(0.6%)
Other	39	(2.5%)

37. Retirement. 161 (10.5%)

(missing=62)

38. Reviewed for GED Tests. 1125 (72.8%)

For those respondents who reviewed.

39. Method of review.

GED preparation classes	781	(69.4%)
Individual tutor	120	(10.6%)
GED practice test	576	(51.2%)
GED manual or book	834	(74.1%)
TV	43	(3.8%)
Family/friend	235	(20.9%)
Talked with someone who took the Tests	147	(13.1%)
Other	107	(9.5%)